

Thesis Launch:
Helping Students Begin the Undergraduate Honors Thesis Process

by
Trisha L. Eardley

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Approved March 2019 by the
Graduate Supervisory Committee

Ray R. Buss, Chair
Mark Henderson
Melissa Johnson

ARIZONA STATE UNIVERSITY

May 2019

ABSTRACT

Honors colleges have offered an academically rigorous option for growing numbers of diverse students. This study took place at a large, public university that required undergraduate students to complete a thesis to graduate from the honors college. In 2017, 97% of students who began the honors thesis prior to senior year completed it. Thus, the aim of this study was to help more students begin the honors thesis process early.

Thesis Launch was a six-week intervention that was designed to provide support for students in the critical early steps of thesis work such as brainstorming topics, examining professors' research interests, reaching out to professors, preparing for meetings with potential thesis committee members, and writing a thesis prospectus. Thesis Launch offered web-based resources, weekly emails and text message reminders, and was supplemented by in-person advising options.

A mixed methods action research study was conducted to examine: (a) students' perceptions of barriers that prevented beginning thesis work; (b) self-efficacy towards thesis work; (c) how to scale the intervention using technology; and (d) whether participants began the thesis early. Quantitative data was collected via pre- and post-intervention surveys, journals, and prospectus submissions. Qualitative data came from student interviews, journals, and open-ended questions on the surveys.

Quantitative data showed that after students participated in Thesis Launch, they had higher self-efficacy to work with professors, perceived fewer barriers to thesis work, and greater proportions of students began thesis work early. The qualitative data were complementary and showed that participants overcame barriers to thesis initiation, built

self-efficacy, preferred an online intervention, and began thesis work early. Findings also showed that a primarily technology-based intervention was preferred by students and showed promise for scaling to a larger audience.

Thesis Launch provided a framework for students to begin work on the honors thesis and have mastery experiences to build self-efficacy. Strategies that fostered “small wins” and reflective efforts also assisted in this aim. Participants accomplished tasks tied to thesis work and customized their personal thesis timelines based on work begun during Thesis Launch. Finally, a discussion of limitations, implications for practice and research, and personal reflection was included.

DEDICATION

For my family, who instilled in me a love of learning
and showed me the value of education. Thank you for this wonderful gift.

ACKNOWLEDGEMENTS

I would like to thank my Chair, Ray Buss for his guidance and support throughout the process. Dr. Buss, you have the best interest of your students in mind, and I feel privileged to have worked under you. I learned lessons on personal and professional care from your example. You truly love what you do, and that shines through in your interactions with others. I cannot think of a better guide through the research process.

I am also humbled by the contributions of Mark Henderson. Dr. Henderson, your insights as a content expert in honors and your perspective as an engineer helped make this project stronger and clearer in its message. The highest compliment I could have received is when you told me I think like an engineer.

Having Melissa Johnson join my committee was an honor. Dr. Johnson, your knowledge and expertise as an honors advising administrator was key to making sure my work was relevant and meaningful. Following your example, I am committed to advancing the profession of academic advising.

I feel fortunate to work in an environment where I believe in the mission of our college to nurture intellectually engaged students. I am surrounded by talented colleagues who support my efforts to bring this intervention to life, and I am thankful to work in an office where we lift each other up. Additionally, I owe a debt of gratitude to the many students I have advised over the years. Watching their triumphs and struggles with the honors thesis process inspired my work.

The stars aligned to allow my husband and me to work through the doctoral journey side by side. Mike, thank you for being a sounding board and listening to me talk through every bump in the road. Our chats helped me understand my thinking and

encouraged me to persevere through the challenges. You inspire me to strive to be better each day.

Finally, I must acknowledge the contribution of Scout and Jack, my furry, four-legged friends. Their companionship helped me make it to the finish line. Jack, thank you for literally sitting by my side during the many hours of writing. Scout, thank you for modeling patience and reminding me that the best way to get through writer's block is to go for a walk.

TABLE OF CONTENTS

	Page
LIST OF TABLES	xi
LIST OF FIGURES	xii
CHAPTER	
1	LEADERSHIP CONTEXT AND PURPOSE OF THE ACTION 1
	Larger Context 2
	Local Context 4
	Problem of Practice 8
	Research Questions 11
2	THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT 13
	Theoretical Perspectives 14
	Self-Efficacy 14
	Change via Small Wins Theory 18
	Reflective Practices 22
	Scaling via Technology 24
	Previous Cycles of Action Research 28
	Action Research Cycle 0 29
	Action Research Cycle 1 33
	Action Research Cycle 2 41
	Summary 50
3	METHOD 52
	Research Questions 52
	Setting 53
	Participants 54
	Role of the Researcher 55

CHAPTER	Page
Intervention	56
Outline of the 6-week program	57
Thesis workshop	61
Website	62
Reminders	63
Office hours	64
Instruments and Data Sources	65
Survey	66
Weekly journals	68
Interviews	69
Prospectus submission	69
Researcher journal	70
Procedure	70
Timeline	71
Data Analysis	73
Quantitative data	74
Qualitative data	74
Validity, Reliability, Credibility, and Strengths	75
Reliability	75
Validity	75
Credibility	77
Strengths	77
Summary	78
4 DATA ANALYSIS AND RESULTS	79
Results from Quantitative Data	79
Self-efficacy and perceived barriers to begin the honors thesis	80

CHAPTER		Page
	Small wins theory and scaling via technology	85
	Journals	88
	Thesis prospectus submission	89
	Results from Qualitative Data	89
	Perceiving barriers and overcoming those barriers	92
	Building self-efficacy using various strategies	96
	Using technology to learn and support navigation of thesis components	105
	Customizing individual timelines for thesis work	107
	Utilizing resources	110
	Summary	114
5	DISCUSSION	116
	Complementarity and Integration of Quantitative and Qualitative Data	116
	Discussing of Findings	118
	RQ1	119
	RQ2	120
	RQ3	121
	RQ4	122
	Limitations	123
	Implications for Practice	125
	Implications for Future Research	126
	Reflection	127
	Conclusion	129
	REFERENCES	131

APPENDIX	Page
A. CYCLE 0 INTERVIEW QUESTIONS	138
B. CYCLE 1 SURVEY	141
C. CYCLE 2 SURVEY	146
D. BRAINSTORM PAGE	153
E. ELEVATOR PITCH AND INTRODUCTION EMAIL	156
F. PROSPECTUS PLANNING PAGE	159
G. THESIS LAUNCH TEXT MESSAGES AND SCHEDULE	161
H. THESIS LAUNCH SURVEY	165
I. THESIS LAUNCH: ONLINE REFLECTION JOURNAL	172
J. THESIS LAUNCH INTERVIEW QUESTIONS	175
K. THESIS LAUNCH CONSENT FORM	178

LIST OF TABLES

Table	Page
1. Descriptive Statistics for Cycle 2 Self-Efficacy Score	44
2. Ethnicity Demographics of the Honors College and the University	53
3. Ethnicity Demographics of the Honors College and Thesis Launch Participants	55
4. Thesis Launch Weekly Outline	60
5. Alignment of Data Sources to Research Questions	65
6. Thesis Launch Intervention Timeline	72
7. Timeline and Procedures	72
8. Cronbach’s Alpha Estimates of Internal Reliability, Self-Efficacy Scores	80
9. Descriptive Statistics, Survey Self-Efficacy Scores	81
10. Descriptive Statistics of Student Barriers to Beginning the Honors Thesis	83
11. Descriptive Statistics, Post-Intervention Survey Small Wins Items	85
12. Descriptive Statistics, Post-Intervention Survey Technology Items	86
13. Descriptive Statistics, Post-Intervention Survey Resources Items	87
14. Theme-Related Components, Themes, and Assertions Based on Interviews, Journal Entries, and Open-Ended Survey Responses	90

LIST OF FIGURES

Figure	Page
1. Honors College Freshmen Enrollment	5
2. Honors College 4-year Graduation Rate	7
3. Difference between Efficacy Expectations and Outcome Expectations	14
4. Model of Change	19
5. Process of Action Research	28
6. Thesis Launch Website, Week 3 Countdown: ENVISION	63
7. Model of Concurrent Mixed Methods Action Research Design	73

CHAPTER 1

LEADERSHIP CONTEXT AND PURPOSE OF THE ACTION

I was extremely nervous to start my thesis so I put it off as much as I could. The beginning was the hardest part (finding a topic, talking with my director, and completing the prospectus). As soon as that was over, everything else kind of fell into place (Cycle 1 survey response).

I had no idea how to gather thoughts or ideas for my thesis. In this I felt as if I had no guidance on what to do or how to approach it. I attended the thesis project workshop that covered logistics of how to get the thesis turned in but I never felt prepared for what was expected of me as a student completing this project. I felt limited in resources as in guidance on how to get a project started (Cycle 1 survey response).

These insights came from honors students who were reflecting on their undergraduate honors thesis. Although students viewed their honors thesis as a signature part of the honors experience, many students struggled with the initial stages of beginning the process. In this action research dissertation, I aimed to help honors students by providing resources and tools to assist with the crucial early steps of beginning a thesis. Action research has been used extensively as a practitioner model with change implemented by individuals who intimately understand the context of the workplace (Buss, 2018). Action research was a method focused on identifying a problem of practice and implementing multiple cycles of interventions to address the problem within the context of the practitioner's sphere of influence. Each cycle included planning, acting, observing, and reflecting before moving on to the next cycle and building upon past cycles (Mertler, 2014; Herr & Anderson, 2015). In chapter one, I have introduced the

study by first providing information on the larger context of honors colleges and academic advising. Then, I explained the context of my office, honors advising, and showed how honors advisors helped students with the undergraduate honors thesis process, a requirement for successful completion of the honors curriculum.

Larger Context

This action research dissertation took place within an undergraduate honors college. Honors colleges and programs have been growing in popularity with hundreds of programs developed nationwide (National Collegiate Honors Council, 2015). Honors colleges and programs have become a way for larger state universities and smaller institutions to distinguish themselves as strong academic options for highly qualified students. They have also provided an attractive opportunity for states wishing to retain skilled graduates in-state as “the vast majority of undergraduates settle permanently within a radius of one hundred twenty-five miles from the institution where they pursue their undergraduate education therefore the state could gain significant talent by supporting an honors college” (Humphrey, 2008, p. 12). Honors colleges and programs have attracted students by providing a community of scholars, smaller classes, access to research and internships, numerous clubs and organizations, lectures and events, a residential living and learning option, and particularly important to this study, enhanced academic advising. Just as students realized the benefits in joining an honors college or program, higher education administrators have seen the benefit of these programs in raising the academic profile of the institution and retaining human talent.

Although there were many similarities between honors colleges and programs, there was no single standard. For example, not all honors colleges or programs required

an application, some had an undergraduate thesis requirement whereas others did not, and although most had a credit hour requirement, others eschewed honors credit hour requirements for point systems where students earned points for things like honors courses, leadership, internships, and community involvement (Datta, Law, & Law, 2015). The National Collegiate Honors Council (2017) outlined characteristics that defined *fully developed honors colleges* such as clear admission criteria, at least 20% of a student's degree program for honors credit, and requiring an honors thesis or capstone project. Additionally, to be a fully developed honors college, NCHC (2017) required that "honors students receive honors-related academic advising from qualified faculty and/or staff." While my college met the NCHC requirements, this varied widely across other honors colleges and programs with some programs offering no separate honors advising to colleges that had dedicated offices of honors advisors. In particular, there was little research on honors advising and little information specifically on advising honors students (Clark, Schwitzer, Paredes, & Grothaus, 2018; Huggett, 2004). As honors colleges and programs have developed, this student population has grown. Honors students have demonstrated unique needs, and I observed a need to develop specific advising approaches to assist this special population.

Academic advising has long been recognized as an important tool to increase student retention at colleges and universities (Tinto, 1993). Retention has been a goal that has served students and the institution because students benefit by making progress towards educational goals, and the institution benefits through higher graduation rates (Drake, Jordan, & Miller, 2013; Tinto, 1999). On a practical level, retaining students has been more cost effective when compared with the cost of new student recruitment (Noel,

Levitz, & Saluri, 1985). Advising, the primary structured service on campus that all students pass through multiple times for one-on-one conversations, has served as the principal means by which retention has been enhanced (Drake et al., 2013; Tinto, 1993; 1999). Advising helped students navigate the institution (Gordon, Habley, & Grites, 2008). Light (2001) boldly asserted, “good advising may be the single most underestimated characteristic of a successful college experience” (p. 81). In the current context, honors students have been served by an honors advisor and an academic advisor in the major, so these students have received even more individual advising.

The National Academic Advising Association (NACADA) has served as the principal professional organization for academic advisors. NACADA (2006) has published pillars of academic advising, which have recommended that advisors conduct *advising as teaching* with learning outcomes. As enrollments have grown and advisor loads have become larger, advisors have had to enlist and develop a variety of advising techniques and tools to best serve students. Tinto (1999) commented, “good advising should not be left to chance” (p. 9) and further, he noted advising should be an integral part of the student experience with advisors trained in the “best professional knowledge of the day” (p. 9). Consistent with these concepts about quality advising, honors advisors have been expected to rise to the occasion to help students thrive and graduate.

Local Context

Understanding the context of a problem has been vital to the conduct of an action research study (Herr & Anderson, 2015). Specifically, in my role, I have worked at an honors college at a large, Research I University for the past ten years. Our students have been very talented academically, have represented all majors at the university, and have demonstrated greater ethnic diversity than the university student body as a whole

(Barrett, The Honors College, 2015). Thus, our students were academically capable while coming from a variety of backgrounds.

Our university has seen tremendous growth in the student population with proportionally higher growth within the honors college (Keeler, 2014). To give some perspective, in 2007 the university had approximately 51,000 students (Arizona State University, 2019), and the honors college had approximately 2,500 students (Barrett, The Honors College, 2012). In 2017, the university rose to approximately 83,400 students (Arizona State University, 2019), and the honors college had slightly over 7,200 students (Barrett, The Honors College, 2017). This growth was illustrated by the meteoric growth of the honors freshmen classes. See Figure 1.

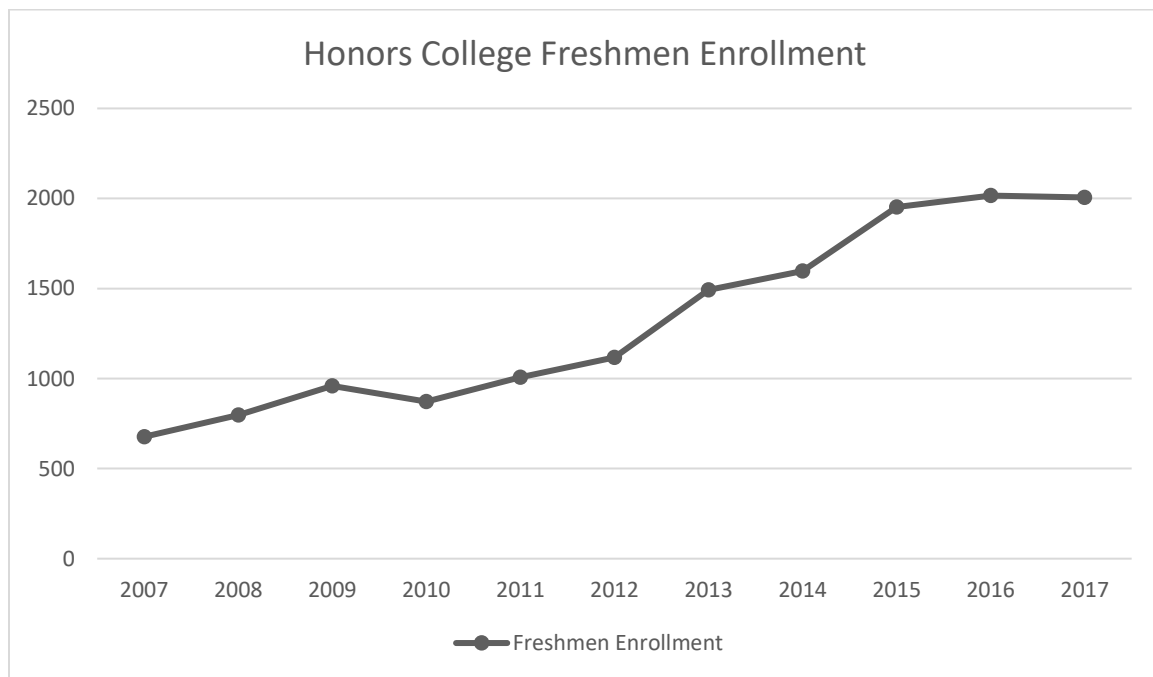


Figure 1. Honors College Freshmen Enrollment. Adapted from Barrett, The Honors College Fact Book 2011-2012, by Barrett, The Honors College, 2012, p. 13, and Barrett, The Honors College Fact Book 2016-2017, by Barrett, The Honors College, 2017, p. 16.

In the same timeline as above, the honors advising office grew from three full-time advisors plus a director to ten full-time advisors, a director, and an associate director of advising. This student volume meant that honors advisors also must have been well-versed in a variety of advising techniques to meet the needs of our students. Honors advisors have been knowledgeable about many academic resources available for students at the university and in the community. As our student population has grown, honors advisors have been required to find new ways to share information to help students and to make advising more efficient and influential.

My role in the college was an administrator for our honors advising team while also keeping a student caseload, so I was familiar with the challenges of this context. Honors advisors have played a unique role that differed from traditional academic advisors. At our university, all students have had an academic advisor in the major, so honors advisors have been an additional resource for this student population. Honors advisors have been focused on helping students through the honors requirements, connecting students to relevant opportunities, and providing holistic guidance and support. Being an honors advisor has been an exciting challenge due to the variety of honors students and the diverse information advisors were responsible for sharing.

Starting in 2005, it became mandatory for honors students to utilize honors advising services. Mandatory honors advising was implemented after a change in college leadership in 2003. This change in leadership and ensuing changes in policies, such as required honors advising, coincided with a rise in graduation rates. The honors college four-year graduation rate rose from 23% for the 2003 cohort (Barrett, The Honors College, 2011) to 76% for the 2012 cohort, the latest data available (Barrett, The Honors

College, 2016). This was tremendous growth, and what made it even more impressive was the student population was growing exponentially during the same time period. To give further context, the four-year graduation rate for the university at large was 43% for the 2012 cohort (National Center for Education Statistics, 2018). This shows the degree to which honors students graduated at a higher rate. See Figure 2.

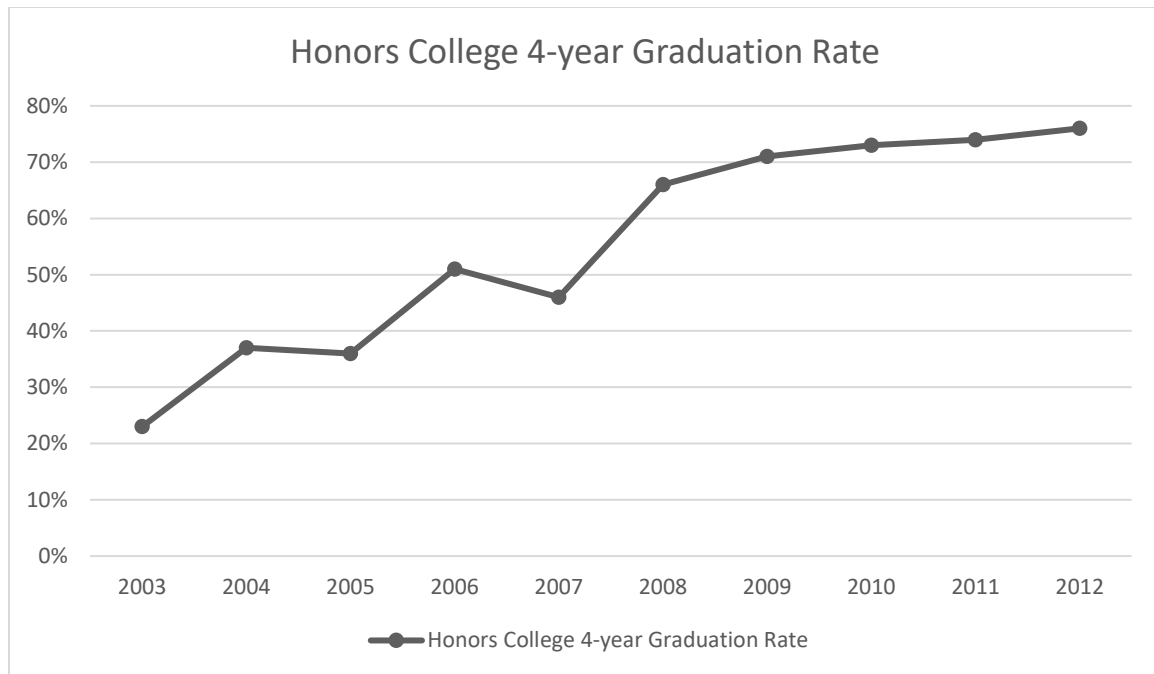


Figure 2. Honors College 4-year Graduation Rate. Adapted from Barrett, The Honors College Fact Book 2011-2012, by Barrett, The Honors College, 2012, p. 15, and Barrett, The Honors College Fact Book 2015-2016, by Barrett, The Honors College, 2016, p. 14.

In our college, honors students must have completed a set of additional requirements to graduate with honors, and honors advisors helped students stay on track to meet these expectations. These requirements included (a) completing about one-third of the undergraduate coursework for honors credit, (b) having a minimum GPA of 3.25 by graduation, (c) participating in a freshman honors seminar sequence, and (d) completing an undergraduate honors thesis. Completing an undergraduate honors thesis

has been considered to be the culminating honors experience. The thesis has been an open-ended academic task where students identified potential research topics and areas of interest. Subsequently, students were responsible for requesting professors with whom they would like to work to lead or participate on their thesis committees. Most students have chosen to work on a thesis related to their major, and most students worked with professors from whom they took a class, but these were not a requirement. The honors college provided basic guidelines for the structure of the thesis committee and required touch-points that students met throughout the process. These touch-points included mandatory honors advising, completing a thesis workshop, establishing a thesis committee, writing a prospectus, holding a thesis defense, and submitting the final thesis paper.

Problem of Practice

In our yearly survey of graduates, honors students reported the honors thesis was both one of the best experiences they had as undergraduates as well as one of the most challenging. From students' perspectives, the thesis was important because it prepared them for graduate programs, professional schools, and employment. Moreover, it provided students with opportunities to participate in meaningful research in an academic discipline and to build faculty networks that translated to recommendations and connections beyond the classroom. Finally, the thesis afforded students prospects for enhanced project management skills and occasions to clearly articulate themselves and communicate with audiences with differing viewpoints. Inevitably, there have been unforeseen academic and personal challenges as students worked through the thesis. Students learned valuable skills and attained personal insights as they worked through

thesis challenges and persevered to create meaningful work. Students have shared similar sentiments each year in our annual graduate survey.

There has been considerable freedom and flexibility in the honors thesis process, especially at the beginning stages when students were identifying the research area and the professors with whom they wished to work. Some students thrived when presented with this challenge whereas others struggled with the lack of structure in starting the honors thesis process. Evidence has shown that students who started on an honors thesis early and submitted a prospectus were more likely to complete the honors thesis. Looking at college data for spring 2017 graduates, 97% of students who submitted a prospectus early completed an honors thesis (272/279) compared to 88% of seniors overall who completed an honors thesis (837/949).

Development of the prospectus was an important step in the thesis process because it required students to identify two professors to support their research efforts. Moreover, as part of the prospectus, students submitted a written research plan with a two-semester timeline for completion. Although the prospectus has been considered “required,” routinely, there have been students who did not submit one. Looking at college data for spring 2017 graduates, 36% of students who did not submit a prospectus completed an honors thesis (31/85). By contrast, 93% of students who submitted a prospectus completed an honors thesis (806/864). Remarkably, only 3% of students who submitted their prospectus early did not complete the thesis (7/279). Overall, 95% of students who completed a thesis graduated with honors (791/837). Thus, it was evident that students who started the thesis early, wrote a prospectus, created a plan, and obtained

the support of a thesis committee, were more likely to complete a thesis and graduate from the honors college.

Our college recognized this and developed a priority prospectus due date in 2016 to encourage students to begin the thesis process early. In the past, the prospectus was due at the beginning of the semester when students began the thesis. With the addition of a priority due date, students were encouraged to submit the prospectus at the end of the *semester prior* to beginning the thesis. In the first year, 100 students submitted a prospectus by the early priority due date. I wanted to determine how to help even more students begin the thesis process early.

Honors advisors have actively helped students learn about the honors thesis. Advisors introduced the thesis as early as freshmen orientation, and it has been discussed at each annual, required advising appointment. Of course, some honors students have been self-directed and were able to navigate the thesis process with the information provided in those sessions, whereas other students needed more support. These latter students may not have considered a yearly 30-minute advising appointment as being sufficient to help them through the process. In fact, advisors have observed these students come in for multiple, additional appointments. In particular, students reported struggling with the initial stages of beginning an honors thesis: identifying research topics and approaching professors with whom they wanted to work. Originally, this was something I observed as a practitioner and that observation was confirmed as I collected data more systematically in the initial stages of this action research dissertation.

I wanted to look for ways advising could further support students struggling to begin the honors thesis. Various interventions have been tried throughout the years.

Faculty-led thesis workshops were offered for over ten years. These in-person workshops started as optional and became a mandatory requirement in 2013. When the thesis workshop became mandatory, it was also developed into an online version. Both options are still available and marketed to sophomore students as an introduction to the thesis process as a whole. Additionally, smaller campuses have developed their own versions of the thesis workshop. For example, one of our smaller campuses offered a thesis workshop that brought in professors to match up with students on research projects, similar to the idea of speed dating. This was a successful program that worked well for the size and profile of students at this particular campus.

Since I was based on the largest campus with over 6,000 students, I had to think carefully about creating an intervention that would serve a diverse student population and be sustainable for our office. As a result, I considered the use of technology as a tool to reach a large student population. Although online and mobile resources would not replace face-to-face individual interactions, it had the potential to supplement face-to-face interactions in a format that was flexible and convenient to the students. It was also a way to scale additional support for a growing college. In sum, honors advising had an opportunity to provide structure for students as they navigated the initial stages of the honors thesis. The evidence about initiating honors thesis work and the application of an intervention to support those who were uncertain about initiating the process suggested several research questions that guided the conduct of the dissertation.

Research Questions

As I considered my efforts, first, I wanted to explore how honors advising helped students begin the honors thesis process and what barriers students perceived in the

beginning stages. Specifically, I thought that breaking up the initial steps into small, actionable items might help students build self-efficacy towards beginning the honors thesis early. Additionally, I wanted to investigate how honors advisors can utilize technology to supplement the thesis workshops and one-on-one appointments that already occurred. Finally, I hoped to learn if the intervention encouraged students to start thesis work early. This led four research questions:

RQ1: What barriers did students describe when beginning the honors thesis process, and how did the perception of those barriers change over time?

RQ2: How and to what extent did the Thesis Launch program affect student self-efficacy and completion of tasks connected to beginning the honors thesis?

RQ3: How and to what extent did technology help with scaling thesis preparation to a large audience?

RQ4: How and to what extent did students who participate in Thesis Launch begin early on their honors thesis work?

CHAPTER 2

THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT

In this chapter, I have explained how various theoretical perspectives provided a framework to understand the problem and offer insights into solutions and interventions moving forward. In the first portion of this chapter, I reviewed various theoretical perspectives and related literature. Specifically, I examined Albert Bandura's work on self-efficacy as a way to determine whether students felt they could complete the honors thesis. Karl Weick's small wins theory offered a solution to structure the intervention as a series of small steps to be completed to reach a larger goal. Donald Schön's ideas about reflection suggested it might be a productive tool to aid students along the journey to developing self-efficacy. Finally, literature on the use of technology in higher education was reviewed to offer a way to scale the intervention to a large student population.

In the second part of the chapter, I reviewed the previous cycles of action research undertaken prior to the dissertation study. Reconnaissance was undertaken in Cycle 0 to determine a need within the context of honors advising. Students were surveyed in Cycle 1 to understand their perceptions surrounding the honors thesis process. Finally, in Cycle 2, I implemented a trial intervention, which provided an opportunity to try the intervention, make improvements, and test instruments that could be refined for the dissertation study. Each of these cycles was instrumental in informing the next cycle of research and contributed to a fully formed intervention and well-developed instruments.

Theoretical Perspectives

Self-Efficacy

Albert Bandura (2005), the originator of Social Cognitive Theory, was one of the first theorists to discuss cognitive processes. Social Cognitive Theory provided a framework for examining and understanding the relations among peoples' cognitions, behaviors, and their environment, and their mutual influence on each other. Further, Bandura suggested that people could exercise control to correct situations when problems occurred and they could proactively use thought and goals setting to influence future behavior (Bandura, 2005). From these key ideas of *self-efficacy*, the notion of personal agency in a particular context was developed. Bandura (1982) defined self-efficacy as "judgements of how well one can execute courses of action required to deal with prospective situations" (p. 122). In other words, self-efficacy referred to an individual's belief in his or her ability to complete a task or be successful in a situation. This was critical because belief-in-self influenced whether or not a task was undertaken or completed. Bandura distinguished between how expectations from self-efficacy differed from expectations about outcomes. See Figure 3.

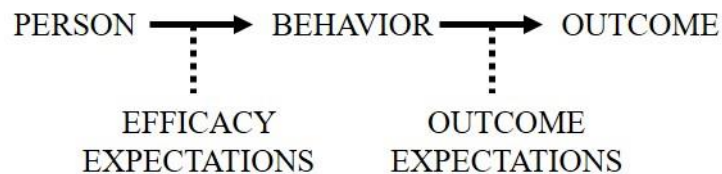


Figure 3. Difference between Efficacy Expectations and Outcome Expectations. Adapted from Self-efficacy: Toward a Unifying Theory of Behavioral Change, by A. Bandura, 1977, p. 193.

According to this model, self-efficacy came before behavior, “The greater the increments in self-perceived efficacy, the greater the changes in behavior” (Bandura, 1977, p. 206). Thus, if self-efficacy was low, it could inhibit behavior even if an individual had differing expectations about the final outcome of the task.

Bandura (1977; 1982) claimed that self-efficacy was derived from four principal sources: performance accomplishments or mastery experiences, vicarious experience, verbal persuasion, and physiological states or emotional arousal. First, performance accomplishments referred to situations where the individual had the opportunity to attain personal success in a task and experience mastering a task or skill. As the individual experienced success, self-efficacy increased. On the other hand, if there was too much failure, self-efficacy could be harmed, especially if the failure occurred early on. Second, vicarious experiences occurred when individuals saw others engaging in the task, modeling it, with success, even if it took persistence to attain success. It was important that the modeling demonstrated clear goals and outcomes. Clear goals and outcomes afforded greater self-efficacy than if the modeling was carried out in a situation that was more ambiguous to the participant. Third, verbal persuasion occurred when another individual talked with the participant to encourage efficacy and task completion, e.g. ‘an appropriate pep talk.’ Persuasion was commonly used due to ease of use, but verbal persuasion was not as effective as mastery experiences or vicarious experiences. Fourth, the final source for efficacy was psychological states that occurred when participants were in stressful situations that elicited an emotional response. High stress and high emotions typically hindered self-efficacy, so a calm, safe environment was better for increasing self-efficacy (Bandura, 1977; 1982).

There was also evidence that academic self-efficacy correlated with academic success (Bandura, Barbaranelli, Caprara, & Pastorella, 1996). Also of interest, Bandura (1982) noted individuals who perceived themselves as having high self-efficacy were less likely to invest time and energy into preparatory tasks when learning.

Studies based on self-efficacy. In a related study, Pintrich and DeGroot (1990) looked at the relationships of motivational orientation, self-regulated learning, and classroom academic performance as measured by self-efficacy, intrinsic value, test anxiety, self-regulation, and use of learning strategies. Their study validated Bandura's work by determining that self-efficacy was a key predictor of academic performance. "In general, the research suggests that students who believe they are capable engage in more metacognition, use more cognitive strategies, and are more likely to persist at a task than students who do not believe they can perform the task" (Pintrich & DeGroot, 1990, p. 34). This underscores how important it is for students to have self-efficacy before undertaking complex academic tasks such as an honors thesis.

Many studies have been conducted on self-efficacy, but few focused on undergraduate honors students or students beginning the undergraduate thesis process. Therefore, I took particular note of Shaw, Holbrook, and Bourke's (2013) study on the self-efficacy of undergraduate students as they undertook a final-year research project. Results from this quantitative research study demonstrated self-efficacy influenced student preparedness to complete undergraduate research (Shaw et al., 2013). Their findings aligned with findings from other contexts, such as Bandura et al.'s (1996) study of self-efficacy among young children, which showed academic self-efficacy was related to mastery and success in academic pursuits. Ward and Dixon (2014) studied self-

efficacy of master's level students undertaking a master's thesis. They found that the strength of participant self-efficacy correlated with the extent of the goals set and effort put forth towards those goals. Thus, individuals with higher self-efficacy set larger goals and worked harder towards those goals (Ward & Dixon, 2014). This finding was in conflict with what Bandura's (1982) results, which showed individuals who perceived themselves to have high self-efficacy were less likely to invest time and energy into preparatory tasks when learning, but Ward and Dixon's (2014) results were aligned with the findings from Shaw et al. (2013) that indicated higher self-efficacy was related to greater research preparedness.

Implications. Self-efficacy is an important measure in this study. The aim of this study is to support students who are beginning the undergraduate honors thesis to ensure more students ultimately complete the thesis. Self-efficacy is a measure of whether or not students perceive they are capable of taking the steps needed to move forward through the thesis process. Self-efficacy serves as a measure of their own perceptions of their abilities to complete the task. Self-efficacy precedes behavior (Bandura, 1977), so when it is combined with an outcome measure of task completion, self-efficacy towards creating the honors thesis paints a more comprehensive picture of the students in terms of whether students believe they are capable of beginning and completing the honors thesis. Bandura (1977;1982) asserts that a key way to build self-efficacy is through performance accomplishments or experiencing successful completion of related tasks. Therefore, the intervention is designed with the goal to have students build self-efficacy through their own mastery of various, smaller tasks associated with honors thesis initiation and completion. Because Bandura warns that early failures can impede self-efficacy, the

intervention will be designed to provide the student small tasks to support student success.

Based on the results of the studies highlighted above, higher self-efficacy may also translate to students spending more time in preparing for a goal and expending effort towards accomplishing that goal. Thus, students who already have high self-efficacy may be in a better position to succeed at a large academic task like the honors thesis. On the other hand, what about those individuals who do not possess high levels self-efficacy for such an arduous task? How can we help students who may have lower self-efficacy getting started, or how can we help all students build thesis self-efficacy through the process? These questions led me to investigate change via small wins theory.

Change via Small Wins Theory

Many individuals have experienced frustration or paralysis when presented with large, complex problems, especially if self-efficacy was low for that task. In these situations, individuals may have found “it difficult to learn a novel response, to brainstorm, to concentrate, to resist old categories, to perform complex responses” (Weick, 1984, p. 41). Weick (1986) offered a solution to this situation when he proposed the idea of small wins:

A small win is a concrete, completed, implemented outcome of moderate importance. By itself, one small win may seem unimportant. A series of wins at small but significant tasks, however, reveals a pattern that may attract allies, deter opponents and lower resistance to subsequent proposals. Small wins are controllable opportunities that produce visible results. (p. 35)

Put simply, small wins were a way to break up a large task into smaller component parts that were more manageable and achievable. Then, by seeing progress with small wins, individuals were more likely to persist and eventually complete a larger task or goal.

Small wins worked in several ways. First, the importance of any single win decreased. The failure cost of a small task seemed lower, and the success probability seemed higher. Second, the size of the mental or psychological demand was lower when working through a smaller task. Thus, it caused less mental stress. Third, existing skills were perceived as sufficient to address the problem. The individual may not have felt equipped to tackle the entire large project, but may have felt capable enough to tackle a small, related task. Finally, small wins gave a sense of control back to the individual who initially felt overwhelmed by the large task. Because learning tended to happen in small increments (Weick, 1984), small wins were a natural fit to bolster learning and boost self-efficacy because academic self-efficacy was tied to academic success (Bandura et al., 1996).

The concept of small wins worked well with Guskey's (1985) model of change. Change was thought to occur when individuals changed their beliefs and attitudes first (Hall & Hord, 2011), but Guskey (1985) asserted that if individuals made a change in their behaviors and observed a change in outcomes, this would then change individuals' beliefs and attitudes. See Figure 4. Small wins were a way to test a small change in practice with the hope that the small win would encourage further change and action.

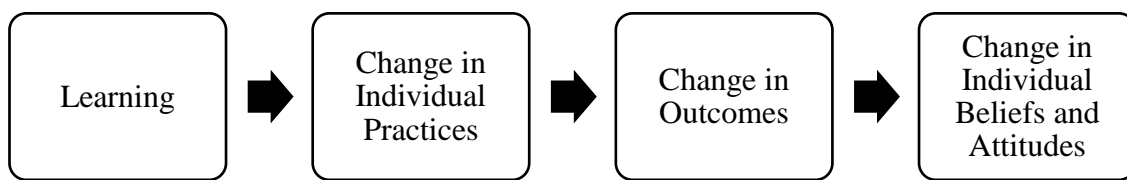


Figure 4. Model of Change. Adapted from Staff Development and Teacher Change, by T. R. Guskey, 1985, p. 58.

Heath and Heath (2010) also recommended making change in small increments by *shrinking* the span of change. If a change felt too big by those expected to make a change, it was often ignored, but by shrinking the span of the change, it felt more manageable to tackle, and again individuals were more likely to continue with the change. To assist with making the change smaller and more manageable, Heath and Heath (2010) advocated *shaping the path*. Shaping the path meant making it easy for individuals to make progress towards the desired outcome and building habits to encourage further change. In the current context, providing honors students small wins in the development of the thesis prospectus could help make the thesis journey easier.

Studies based on small wins theory. Weick (1984) originally positioned small wins within the context of social problems, and more recently, it was studied in business settings. Heath and Heath (2010) reviewed numerous case studies about how change occurs in business contexts. One example involved nurses at a hospital in San Francisco. The goal was to reduce errors when nurses were giving out medications. The hospital shaped the path by having nurses wear a special vest when preparing medications so others would know not to interrupt the nurse, and medication errors went down dramatically. This was a small, concrete change that was easy to implement, and although the nurses initially did not like wearing the vests, as they experienced success they became believers, which was consistent with Guskey's (1985) change model. Moreover, when they saw the results of taking this small action it inspired further action.

Pemberton (2012) discussed challenges with the thesis or dissertation process for master's degree and doctoral students.

One way to help them cope is to map out the incremental elements that comprise the process, making evident that it can be engaged and completed in pieces or stages. Minutes or hours here and there, over time, can and do result in a quality, finished product. (Pemberton, 2012, p. 83)

Pemberton suggested the initial enormity of the thesis process was overwhelming for students. Nevertheless, when the process was deconstructed into smaller more manageable parts, the process was closely aligned with the concept of small wins.

Amabile and Kramer (2011) took the concept of small wins and developed it into the *progress principle*, which referred to making progress in meaningful work. They analyzed daily journals of hundreds of employees to determine what improved individual work performance. This demonstrated to the researchers that people were happier and performed better when they felt they were making progress in meaningful work, and they specifically identified small wins, breakthroughs, forward movement, and goal completion as indicators of progress.

Implications. Bandura (1977) emphasizes that performance accomplishments based on personal mastery can help build self-efficacy. Making progress towards a task “allows [individuals] to feel good, grow their positive self-efficacy, get even more revved up to tackle the next job, and mentally move on to something else” (Amabile & Kramer, 2011, p. 91). Small wins theory provides a way for individuals to make progress and build mastery towards a large goal. It also builds momentum and self-efficacy. As a

result, I chose to use small wins theory to break up the process of beginning the honors thesis into small, manageable tasks.

Further, Bandura (1977) asserts that individuals need to have expectations of efficacy first for behavior to change. Following the Guskey (1985) model of change, changing behaviors affects outcomes, which subsequently influences attitudes and beliefs. By completing tasks to achieve small wins, students will have the opportunity to slowly and incrementally change their expectations, see changes in outcomes, and change their attitudes and beliefs. If students can experience small wins, they will also build self-efficacy, which may lead students to begin the thesis process early.

Reflective Practices

Another theoretical perspective that was useful in framing this problem of practice came from Donald Schön's (1983) ideas about the reflective practitioner. In his work, Schön outlined how to help professionals solve complex problems through reflective practices. Further, he asserted there was a crisis of confidence among professionals with respect to the state of *technical rationality*. When individuals operated using a technical rationality mindset, they defaulted to using stock solutions over 90% of the time rather than coming up with creative solutions.

Schön (1983) recommended using reflective practices. Further, his two suggested approaches to reflection were *reflection-in-action* and *reflection-on-action*. Reflection-in-action referred to the act of reflecting in real-time as the interaction was taking place. Reflection-on-action referred to reflection that took place after the fact. In his reflective practitioner framework, Schön eloquently suggested that when individuals were practicing new skills, they should reflect in the moment *and* afterwards, to build self-

efficacy and continuously make progress towards a goal. It also provided a model of how to assist students in making meaning of their thinking about the thesis through reflective practices.

Studies based on reflective practices. Schön's (1983) seminal work on reflection was often used as a starting point for further research. Dell'Olio (1993) closely examined Schön's (1983) reflection-in-action concept and applied it to staff developers for K-12 educators. Dell'Olio found that although staff developers were interested in reflective practices, few actually used these practices instead defaulting to a technical rationality approach. In fact, the staff developers were worried about seeming incompetent if they did not have the answers to situations and therefore avoided using a more open, reflective approach. In situations requiring creativity, individuals needed to be comfortable with uncertainty and not knowing all of the answers (Babrow, 2001; Jordan & Babrow, 2013). Specifically, Jordan and Babrow offered a simple strategy of priming groups to establish separate times for brainstorming and evaluation. By using reflective practices, participants were able to think differently about problems and come up with more creative responses.

Implications. Schön's (1983) framework provides strategies to reflect in the moment *and* afterwards to continuously make improvements and build self-efficacy. Thus, for example, an intervention could be developed that will promote reflection and gives permission for not knowing all of the answers at the beginning with the goal that participants will moved through the project step-by-step. In other words, participants will complete tasks that result in small wins that will slowly build self-efficacy. Moreover, by taking time to reflect on the process, students will be able to observe their progress

towards the thesis. One way the reflective process can be fostered is by asking students to respond to prompts in a journal each week. These prompts would require participants to engage in reflecting on their progress each week during the intervention. Also shown by Bandura (1982) and Pintrich and DeGroot (1990), as students build self-efficacy they are more likely to practice metacognition thus reinforcing the reflective cycle.

The final hurdle was sharing these strategies with a large population of 7,000+ honors students. In the next section, I described a possible method for scaling this work.

Scaling via technology

The honors advisor caseload allowed for one individual appointment per student per year plus walk-in hours. With these large ratios of approximately 550-600 students per advisor, I needed to think carefully about the best way to implement this intervention to ensure that it would be practical and sustainable over the long term. Therefore, additional one-on-one in-person interactions were not the optimal choice. Honors thesis workshops had been offered both in-person and online for several years with great success, so I explored technology as a method to reach students in a format comfortable to them (Hanson, Drumheller, Mallard, McKee, & Schlegel, 2010; Junco & Mastrodicasa, 2007).

Research on technology use of students in higher education has been a growing field of study with the overarching recommendation to connect with students through technology (Junco & Mastrodicasa, 2007; King & Kerr, 2005; Naismith, 2007). Advisors were specifically mentioned as a group positioned to utilize technology “to increase both the efficiency and effectiveness of their work” (King & Kerr, 2005, p. 333). Students expected advisors to be available twenty-four-seven, and they preferred to have quick

personal interactions via email or text rather than researching answers to their questions on their own (Junco & Mastrodicasa, 2007). Academic advising as a profession had lagged behind in the use of technology-mediated communication (Junco, Mastrodicasa, Aguiar, Longnecker, & Rokkum, 2016), and our office was no different. This pointed to a need to explore multiple ways to communicate with students.

Today's students increasingly multi-tasked and used text messaging consistently throughout the day. "Most [students] said they texted all the time, in most classes, with some admitting that they might send over 200 texts in a day, which seems to fit with the quantitative mean of 14.35 hours per week" (Hanson et al., 2010, p. 27). In other words, text messaging was ubiquitous among college students and therefore a prime and preferred communication tool to reach this population.

Thaler and Sunstein (2009) introduced the concept of *nudging*. A nudge referred to structuring choices or environments to encourage a particular outcome. A nudge maintained the choice of individuals, but made it easier for them to take action. Thaler and Sunstein (2009) shared many examples of technology driven nudges to promote change in student behavior. Using technology, such as text messaging, was not a nudge on its own. Instead, the nudge needed to be based on research and grounded in theory to be effective. I viewed using technology as a means to nudge students as a way to scale the intervention.

Sutton and Rao (2014) discussed scaling practices from a business perspective. Their recommendations for successful scaling included scaling with both addition and subtraction as well as slowing down to scale more rapidly (Sutton & Rao, 2014). For this intervention, I considered what needed to be created anew and what could be pared down

to make this intervention agile and scalable. For example, some aspects of the intervention were newly developed, whereas, other aspects built on already existing content to which students had access, although those materials were used in a different context with different goals and explanations. The intervention is discussed in depth in the next chapter. Additionally, completing an intervention through this EdD program was an example of slowing down to scale faster. By taking the time to develop a research-based intervention and testing the intervention in multiple cycles of action research, I hoped to build a program that was based on research and would be sustainable for years to come.

Studies based on technology. Results from previous research studies showed text messaging was an effective way to reach students and promote change (Hanson et al., 2010; Naismith, 2007; Weitzel, Bernhardt, Usdan, Mays, & Glanz, 2007). Naismith (2007) used text messages to send students notices about lectures, campus activities, and assignment submission reminders. Students responded favorably to this method of communication, and Naismith (2007) found changes in student behaviors such as students attending the promoted activities or taking action on assignments based on the reminders. Weitzel et al. (2007) used text messages to deliver information to students about the adverse consequences of alcohol consumption, and they found that students exhibited greater self-efficacy to deal with alcohol and less alcohol consumption. In this particular study, it was interesting to note that although participants complained about the number and repetition of text messages, they still read all messages and the repetition was found to positively affect attitudes and behaviors (Weitzel et al., 2007).

Hanson et al. (2010) found students wanted to make academics a priority, but struggled balancing academics with social time. Students wanted help and explicit instruction on how to manage their time and prepare for academic tasks. The students preferred to get messages about prioritizing academics on the devices they were already using such as smart phones and laptops. By communicating with students in their preferred forms of communication, the intervention integrated seamlessly into the students' lives (Hanson et al., 2010; Naismith, 2007; Weitzel et al., 2007).

Nudging via text messaging showed promise as well. Frankfort (2016) used text messages to encourage students to utilize tutoring and to create study plans. The text messages were designed with social norms, intentions, and social belonging in mind. Many universities have also created chatbots that respond to common student questions (Supiano, 2018), and students appreciated being able to ask questions and get a response instantaneously via text. Frankfort (2016) also found that automated nudging via text messaging yielded results when well-designed.

Implications. Technology, in particular text messaging has proven to be a useful communication tool for students. Moreover, it is also an efficient and effective way to share information with a large audience and nudge students towards action. For example, text messaging tools can be used to schedule messages purposely and proactively. This means that text messages can be set up to be sent at strategic times throughout the semester, and these messages can be pre-written and pre-scheduled before the semester begins.

Even today, there are those in higher education who are reluctant to use technology to foster change behaviors in students. Sutton and Rao's (2014)

recommendations for scaling echo Guskey's (1985) model instructs that individuals need to see a change first before attitudes change. Because action research is conducted in cycles where advocates for change are testing ideas, getting feedback from participants, making adjustments, and trying again, it provides an opportunity to implement a change and let the results of that change influence future attitudes and behaviors. Therefore to facilitate change in the current context, using action research is important and recommended.

Previous Cycles of Action Research

Several cycles of action research were undertaken prior to this dissertation study. Mertler (2014) outlined four stages in each cycle of action research: planning, acting, developing, and reflecting. See Figure 5.

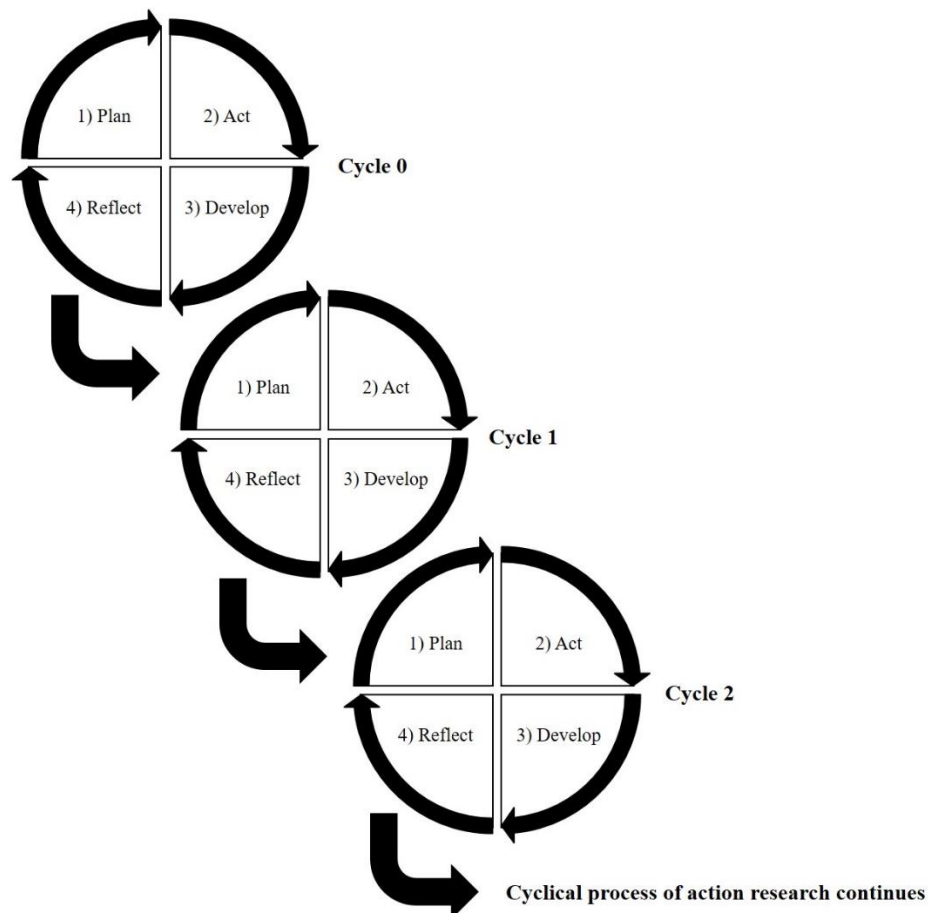


Figure 5. Process of Action Research. Adapted from Action Research: Improving Schools and Empowering Educators, by C. A. Mertler, 2014, p. 38.

Action researchers typically have engaged in these stages for each cycle and used the information gleaned to inform the next cycle. The first step was Cycle 0, which represented reconnaissance work to determine a need in practice. Next, Cycle 1 was developed to survey students to understand their perceptions surrounding the honors thesis process. Then, Cycle 2 provided an opportunity to ‘try out’ the intervention used in this study. Each of these cycles was instrumental in informing the next cycle of research and contributed to the development of an intervention for change.

Action Research Cycle 0

Cycle 0 consisted of interviews with key stakeholders. This process, called reconnaissance, was an important step when beginning action research (Mertler, 2014). The purpose of this cycle was to examine honors advising and student advising interactions at a macro level. At this point in time, I was interested in exploring ideas related to advising professional development and helping students navigate uncertain situations within honors. Four participants were recruited using purposive sampling, two honors advisors and two honors students. An IRB protocol was approved through ASU’s Research Integrity and Assurance office, and each individual participated in a 20 minute semi-structured interview. See Appendix A for a complete list of interview questions.

The foundation of any intervention within honors advising should start with a solid understanding of the role of honors advising, and the interviews started by asking questions about the perceived role of honors advising. The results of Cycle 0 interviews suggested that students felt connected to honors advising and viewed honors advising as a

role that helped them with honors academics, future goal planning, and beyond. Advisors also saw themselves as connectors and guides for students.

Several questions were asked of advisors about advising and professional development such as, “What skills and resources do honors advisors need to continually improve advising practices?” Another example question was, “What does an ideal honors advising appointment look like to you?” Advisors felt that our new advisor training program was robust and “impressive.” New advisors felt supported and believed they were given the tools needed to be successful. Ongoing refresher trainings were also viewed positively. One advisor brought up the idea of self-imposed rules that limited her behaviors and that training was a way to go beyond those limitations. Advisors were focused on the honors requirements, and advisors felt comfortable discussing other areas when training and practice were provided to help the advisor gain expertise in a new skill.

Other questions were asked to explore advisor and student perceptions of uncertainty within honors advising or the honors curriculum. An example question for advisors was, “Do you feel there are areas of uncertainty or ambiguous situations, both in your advising practices and for the students?” Students were asked a similar question, “While going through honors, did you find there were areas of uncertainty or things that were ambiguous? What were they?” All participants acknowledged uncertainty played a role in the honors experience. Students especially perceived uncertainty in the thesis process. One student discussed the thesis process as complicated with many unknowns, and she felt uncertain about how to navigate this complicated process with its unknown outcomes. Advisors perceived uncertainty in the thesis, but also noted uncertainty in other operations that intersect with colleges and units across the university. Advisors felt

better about assisting students through uncertainty when they had specific tools and action plans to reduce uncertainty.

Finally, there were also questions about how to work through uncertainty. Advisors were asked, “How do you help students manage uncertainty?” Students were asked, “How did you deal with uncertainty? Did honors advising help, or how could it have helped?” Students discussed strategies they or their friends used as they worked with uncertainty including avoiding uncertain situations, delaying or avoiding uncertain tasks, or even withdrawing from the honors college to avoid dealing with uncertainty. In general, student shared negative coping mechanisms. One student also discussed positive coping mechanisms such as asking for help from someone familiar with the process or reflecting on past experiences. Advisors also discussed strategies they naturally used to help students with uncertainty including tools for the students, documentation behind-the-scenes, affirmations to the student, normalizing the process, and controlling the flow of information. While I was conducting reconnaissance work, I was simultaneously exploring related literature effectively managing uncertain situations.

Cycle 0 related literature. The values and beliefs tied to uncertainty were viewed through Austin Babrow’s (2001) Problematic Integration theory, a communication theory. Babrow argued that problematic integration took place when there were conflicts of expectations and values (Babrow, 2001). For example, an individual may have uncertainty about knowledge, probability, or likelihood of something happening. Or an individual may have uncertainty about the extent to which an action was valued by self or uncertain about others’ reactions. Integration became an important tool in figuring out how to navigate these two sides, and the more important a

task, the greater the conflict was felt (Babrow, 2001). The honors students interviewed placed emphasis and value on the honors thesis process, so uncertainty was more likely to lead to problematic integration due to the importance placed on the thesis.

Babrow (2001) suggested coping mechanisms to help individuals work through problematic integration, which included changing how they valued what was uncertain, seeing and accepting “the way things are,” and reframing uncertainty as a test and opportunity for self-exploration.

In another study of uncertainty, Jordan and Babrow (2013) obtained results that uncertainty could be beneficial during creative tasks. This qualitative comparative case study explored grade school students who were creating engineering projects and focused on studying the collaborative brainstorming process. Groups who suspended choice and maintained uncertainty during this phase had better outcomes on the tasks (Jordan & Babrow, 2013). Jordan and Babrow (2013) recommended priming groups before brainstorming to establish separate times for brainstorming and evaluation.

At the 2017 annual conference for the National Academic Advising Association, Wilcox (2017) described emotion being intertwined in high-stakes decisions. Students indicated they wanted certainty before exploring majors and careers, but of course, this was an impossible request. In his presentation, Wilcox described uncertain environments as “invitations for inaction” and went on to say that action was necessary for success. These students were experiencing problematic integration due to the value they placed in choosing a major. Wilcox recommended action as a way forward.

Cycle 0 implications. Conducting reconnaissance allowed me to step back and listen to what key stakeholders saw as areas needing attention. In particular, the honors

thesis emerged as an area where both advisors and students indicated a need for more support. Both groups felt there was uncertainty in the honors thesis process. Students felt overwhelmed and paralyzed by the process. Advisors wanted more support on how to assist students during thesis preparation. Action is a way forward through problematic integration. Bandura's (1977, 1982) recommendation of personal mastery to build self-efficacy is essentially a call to action in which individuals attain greater efficacy because they were successful in their attempts to deal with the matter. In the current context, the intervention will help students take action by presenting incremental tasks that will provide for small wins that allow students to move forward with the thesis process step-by-step.

Listening to advisors and students in Cycle 0 led me to focus on the honors thesis process. Both groups talked extensively about the thesis process and saw uncertainty as a barrier. This led to a subsequent investigation with Cycle 1.

Action Research Cycle 1

While conducting Cycle 0 research, it became clear the participants perceived uncertainty in the thesis process as a challenge for students. Before diving into an intervention to address this problem, I used Cycle 1 to formally investigate what type of relationship existed between uncertainty orientation and successful navigation of the honors thesis process. For Cycle 1, I surveyed students who had recently completed the honors thesis to learn more from the identified population. I asked students about their orientation towards uncertainty, and I asked about their experience with the honors thesis. I was curious to see if there was a relationship between these two ideas, but no relationship was found. The key finding from Cycle 1 was that *beginning* the thesis was

the critical juncture that needed more attention. Details of Cycle 1 and results are explained after first reviewing related literature for this cycle.

Cycle 1 related literature. Sorrentino and Roney (2000) described a quarter-century of research investigating uncertainty orientation as either *uncertainty orientation*, which embraced uncertainty as a learning experience, was open to new ideas and beliefs, and was tolerant of others, or *certainty orientation*, which avoided uncertainty, lacked autonomy, was closed to new ideas and beliefs, and was intolerant of others. They described these two orientations as fixed traits that did not change with context (Sorrentino & Roney, 2000). Although I agreed with the overarching spirit of Sorrentino and Roney's work, I disagreed with some of their assertions.

In particular, I suspected tolerance towards uncertainty was malleable and could be a learned skill. Xu and Tracey (2014, 2015) explored the related concept of ambiguity tolerance and the role ambiguity tolerance played in career decision making for undergraduate students. They asserted individuals with low ambiguity tolerance experienced stress, reacted prematurely, and avoided ambiguity, whereas individuals with higher ambiguity tolerance perceived ambiguity as desirable and interesting and did not deny or distort the complexity of ambiguous situations (Xu & Tracey, 2014). Xu and Tracey (2014) also found that students with higher ambiguity tolerance benefitted more from exploration of majors and careers than did students with lower ambiguity tolerance.

T. J. Tracey (personal communication, October 17, 2016) confirmed that greater preference or tolerance of ambiguous situations assisted students. Nevertheless, there was a gap in research results with respect to whether ambiguity tolerance was malleable and could be learned and improved. Based on findings from Cycle 1, if uncertainty

orientation was related to challenges with the thesis process, there was an opportunity to develop an intervention to help students navigate uncertain situations such as beginning the honors thesis process.

Enders, Camp, and Milner (2015) conducted a study specifically addressing the question, “Is ambiguity tolerance malleable?” These authors outlined the debate of whether ambiguity tolerance was a stable personality trait or an attitude that changed based on context, time, and/or experience. They created a study that placed students into situations with various levels of ambiguity. Their findings suggested individual ambiguity tolerance was increased by providing structure and more information (Enders, et al., 2015).

In addition to Problematic Integration Theory (Babrow, 2001), other research on uncertainty included Uncertainty Reduction Theory (Berger & Calabrese, 1975) and Uncertainty Management Theory (Ford, Babrow, & Stohl, 1996). In Uncertainty Reduction Theory, proponents outlined the human drive to reduce uncertainty (Berger & Calabrese, 1975). Their recommendations included seeking and providing information to reduce uncertainty. Those who developed Uncertainty Management Theory built on Uncertainty Reduction while asserting that the goal was not always to reduce uncertainty. Ford et al. (1996) outlined situations where uncertainty could be used as a tool to cultivate creativity. In all three theories, communication and structure were highlighted as tools for helping others successfully cope with uncertainty.

Cycle 1. Research questions for Cycle 1 were of an exploratory nature and reflected a mixed-methods approach:

RQ1: What were honors students’ orientations towards certainty or uncertainty?

RQ 2: What was the nature of the relation between uncertainty orientation and student action towards the honors thesis process?

RQ 3: How did students describe uncertainty in the honors thesis process?

I used Cycle 1 to survey honors students. I recruited students with an anticipated graduation date that semester. I wanted to learn from students who had experience with the honors thesis process. By recruiting participants based on anticipated graduation date, the goal was to obtain a representative sample in terms of gender, race, ethnicity, GPA, major, etc. Only students age 18 or older were eligible to participate.

In an email, students were sent an IRB-approved recruitment letter and were asked to participate by completing an online questionnaire. The recruitment letter was sent to 1,070 students, and the survey was kept open for three weeks. In all, 288 students participated for a 27% response rate.

Students completed a questionnaire to measure student orientation towards a certainty mindset or an uncertainty mindset. The goal was to assess a baseline of student uncertainty orientation and then to assess uncertainty orientation related to the thesis process. Upon reviewing the literature, I was not able to locate an instrument that measured uncertainty orientation. Kornilova and Kornilov (2010) referenced a scale they created in Russian, to measure tolerance of uncertainty as a predictor of creativity. I reached out to the researchers and asked if they could share the scale or if there was an English translation. I did not receive a response. I also reviewed Greco and Roger's (2001) scale for coping with uncertainty. Their constructs focused on emotional or cognitive uncertainty, whereas I was interested in taking action to deal with uncertainty; nonetheless, their questions influenced some of the questions I created.

The survey consisted of 19 questions. See Appendix B for the complete survey. In all, eight items assessed whether students were more prone to certainty orientation or uncertainty orientation with four questions assessing certainty orientation, and four questions measuring uncertainty orientation. An example of a certainty orientation item was, “I prefer familiar environments and situations;” whereas, an example of an uncertainty item was, “I thrive when working through challenging problems, even when the answer is unclear.” Additionally, there were eight descriptive and open-ended items that explored how students navigated the honors thesis process.

Additionally, the survey information was correlated with information on whether students met thesis-related deadlines. Specifically, I focused on when students completed the thesis preparation requirement and when student submitted their prospectus proposal. These were key deadlines students met to begin the thesis.

Data analysis and results. I reviewed uncertainty scores, certainty scores, and deadline scores. I created a scatter plot and regression line for the following: (a) uncertainty orientation and thesis prep deadline, (b) uncertainty orientation and prospectus deadline, (c) certainty orientation and thesis prep deadline, and (d) certainty orientation and prospectus deadline. These scenarios all displayed minimal slope showing relationships that were not statistically significant.

The next step was to look for correlations between the certainty and uncertainty constructs and the thesis deadlines. I ran Pearson correlations using both the combined construct scores and individual questions against the thesis prep deadline and the prospectus deadline. No significant correlations were found between any of the certainty construct items and the thesis deadlines. No significant correlation was found between

the combined uncertainty construct and thesis deadlines, but one individual uncertainty item did show a significant correlation and is discussed below. A significant correlation was also found between the thesis preparation deadline and the prospectus deadline and between the prospectus deadline and the final thesis submission deadline.

Discussion. I first looked to see whether each participant was oriented towards a certainty mindset or an uncertainty mindset. The students were fairly evenly split between the orientations. Of the respondents, 45.83% had a higher score in the uncertainty construct, 44.10% had a higher score in the certainty construct, and 10.07% had the same score in both constructs.

There was not a statistically significant relationship between certainty or uncertainty orientation and taking action to start the honors thesis. My population was honors students, and these were students who had demonstrated skill in completing academic tasks and meeting academic deadlines. While I hypothesized that there may be a difference between certainty oriented and uncertainty oriented students, this was not supported by Cycle 1 results.

I then reviewed correlations between individual questions and the completion of tasks tied to the thesis deadlines. For example, question eight read, “When confronted with the unknown, I try multiple strategies,” and students who agreed with this statement were more likely to turn in the prospectus early. This pointed to an interesting relationship. If students were willing to try multiple strategies when faced with uncertainty, this may have helped them persevere through the situation in order to take action.

A significant correlation was also found between the thesis preparation deadline and the prospectus deadline. Intuitively this made sense to me; if students were early with the thesis preparation deadline, they were also likely to be early with the prospectus deadline. Similarly, there was a positive, significant correlation between the prospectus deadline and the final thesis submission deadline. Students who submitted a prospectus early were more likely to submit the final thesis early.

The results also showed student frustration with uncertainty in the thesis process. These findings caused me to rethink how I was approaching the problem of practice. Specifically, when asked, “Did uncertainty in the honors thesis process impact your ability to get started?” 51.7% said no, 38.25% said yes, and 10.1% said maybe. Interestingly, these responses correlated to student certainty orientation. Students who were certainty oriented were more likely to perceive that uncertainty impacted their ability to start the thesis process. Students may still have met academic deadlines at similar rates as other students, but the certainty oriented students perceived more of a struggle with uncertainty at the start of the thesis process.

This was supported by the qualitative responses written into open-ended questions. One student shared, “I was so scared with how to approach the thesis. So many steps; a year’s long investigative project. Where does one begin on a project like this?” Another student wrote,

I was extremely nervous to start my thesis so I put it off as much as I could. The beginning was the hardest part (finding a topic, talking with my director, and completing the prospectus). As soon as that was over, everything else kind of fell into place.

A third student responded, “I wasn’t sure I was capable of doing my thesis, so I kept putting it off until the very last minute.”

Cycle 1 Implications. In Cycle 1, I was still investigating how students perceived the entire honors thesis process. What I learned was that *beginning* the thesis was a critical point that warranted further attention and exploration. Students who began early were more likely to finish early. This led me to develop an intervention focused on helping students in the early stages of beginning the thesis. In particular, the survey indicated that students who were certainty oriented, and therefore less comfortable with uncertain situations, cited starting the thesis as challenging and unsettling. This is why I wanted to provide more structure for the process of beginning the thesis. It may be impossible to remove the uncertainty students feel about their final thesis project, but I can provide structure and help students build self-efficacy at the early stages. Reducing simple problems can free up mental space and energy to tackle more complex versions as the thesis work progresses (Bereiter & Scardamalia, 1993).

Uncertainty theories range from stating that all uncertainty should be removed to stating that uncertainty can be helpful in moderation. For the honors thesis process, it is not possible to remove all uncertainty, and students recognize this. In the Cycle 1 questionnaire, one student responded, “Despite taking the thesis prep course, I still felt unsure about what my project would actually look like, and I suppose that is because everyone’s project looks different.” Each student will develop an individual project, and there are only minimal guidelines for what the final product will look like. The open nature and flexibility of the honors thesis has some uncertainty inherently built in. What I could do was to develop an intervention to reduce uncertainty in the initial stages of

getting started. A survey response was, “I had no idea how to gather thoughts or ideas for my thesis.” While another said, “The minimal structure of the thesis project is intimidating and makes it more difficult to confidently get started.” Communication is a way to help others cope with uncertainty (Berger & Calabrese, 1975), which is why this intervention was designed to feature clear, weekly communication and ask students to reflect on the experience. This may also help students feel more comfortable with uncertainty and provide a model of how students can build structure for themselves as they continue through the thesis process.

Action Research Cycle 2

Cycle 2 provided an opportunity to conduct a pilot study of the dissertation intervention, which has been described in detail in chapter 3. I developed a 6-week program called Thesis Launch to help students at the beginning stages of starting the honors thesis process. This was developed based on the lessons learned from action research Cycle 0 and Cycle 1. The Cycle 0 interviews showed that the honors thesis was an area that both students and advisors thought needed more attention. Cycle 1 showed that it was specifically the early stages of beginning the thesis with which students wanted help.

Research questions were further refined during Cycle 2:

RQ1: How and to what extent did the Thesis Launch program affect student self-efficacy and completion of tasks connected to beginning the honors thesis?

RQ2: How and to what extent did technology help with scaling thesis preparation to a large audience?

RQ3: To what extent did students who participate in Thesis Launch get started early on their honors thesis work?

Thesis Launch was a 6-week program that teased apart the process of brainstorming research ideas, exploring professors with whom to work, practicing talking to professors about research, and writing the thesis proposal. The goal was to help students achieve small wins to build self-efficacy, which would encourage further action towards completing the honors thesis. Thesis Launch was developed as a program that was delivered primarily through online resources with text message reminders and with supplemental in-person advising. Students were recruited using purposive sampling based on anticipated graduation date. I targeted junior honors students who had not yet begun the honors thesis. An IRB approved recruitment letter was sent to 162 students, and 25 consented to participate in Cycle 2.

Instruments. Several instruments were created and tested during Cycle 2. Instruments included a survey, weekly student journals, semi-structured interviews, and prospectus submission data.

Survey. Pre- and post-intervention questionnaires were developed for Cycle 2. See Appendix C for the Cycle 2 survey. The pre-intervention questionnaire focused primarily on assessing student self-efficacy towards starting the honors thesis. The post-intervention questionnaire asked the self-efficacy questions along with additional questions about small wins and the usefulness of the intervention. Participants responded using a 6-point Likert scale where 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, 1 = *Strongly Disagree*. Questions were aligned with

research questions 1 and 2 with the goal of assessing student self-efficacy, completion of tasks, and use of technology.

Weekly journals. Thesis Launch participants were asked to write in a weekly online reflection journal. The goal was to encourage self-reflection for participants while also collecting real-time data as participants were working through the program. The online journal consisted of four questions asked each week to make it simple for students to complete in five to seven minutes. The online reflection journal was aligned with research questions 1 and 2 with the goal of assessing student self-efficacy, completion of tasks, and use of technology.

Interviews. Additional qualitative data were obtained from face-to-face, semi-structured interviews with Thesis Launch participants. For Cycle 2, I conducted two interviews at the conclusion of Cycle 2. The interview questions were aligned with research questions 1 and 2 with the goal of assessing student self-efficacy, completion of tasks, and use of technology.

Prospectus submission. The advising office tracked when students submitted their prospectus proposal. I wanted to determine whether the Thesis Launch pilot intervention helped students begin the honors thesis early. Review of this data aligned with research question 3 to determine to what extent participants started honors thesis work early.

Data Analysis and Results. Because I collected both quantitative and qualitative data for Cycle 2, analysis and results were presented by instrument.

Survey. Twenty-five students completed the pre-intervention survey and six completed the post-intervention questionnaire. Students were asked to identify reasons

why they had not started the honors thesis. The items with the highest responses were, “I don’t know where to start” and “I don’t know which professors to approach” with 76% agreeing with these statements. Other items with high scores included, “Procrastination” with 68%, “I don’t have any research ideas” with 60%, and “Unsure how to approach professors” with 56%. I found the items in this section to be useful, so I refined these items further under the construct of perceived barriers for the dissertation study.

Next, I reviewed self-efficacy items for the six students who completed both the pre- and post-intervention assessments. See Table 1. Results showed students who completed the Thesis Launch pilot increased their self-efficacy scores from 3.90 to 4.78. Participants saw an increase in their self-efficacy of 0.88 or approximately from slightly agree to agree on the Likert scale.

Table 1

Descriptive Statistics for Cycle 2 Self-Efficacy Scores (n=6)

	Mean	Standard Deviation
Pre-intervention Self-Efficacy	3.90	1.04
Post-intervention Self-Efficacy	4.78	1.06

Then, I conducted a reliability analysis. When the questionnaire was created, I developed a new instrument specific to my context. To begin, I closely studied Bandura’s (2006) recommendations on using scales to measure self-efficacy. I then created a draft of the questionnaire. This draft was refined by soliciting feedback from academic professionals. After reviewing the data, I obtained Cronbach’s alpha measure to explore internal consistency for the self-efficacy scale. The overall coefficient alpha

measurements were .90 for the pre- and 0.91 for the post-intervention assessments, which indicated strong reliability (Fraenkel & Wallen, 2005).

For this cycle, I had eight questions asking broadly about self-efficacy. Upon reflection of this cycle, I realized this was too broad. This led me to refine the survey for the dissertation study to assess three components: (a) self-efficacy to begin the honors thesis, (b) self-efficacy to collaborate with professors on thesis work, and (c) self-efficacy to complete the thesis. These changes have been discussed further in chapter 3.

On the post-intervention assessment, I also asked questions about small wins to determine whether this approach was helpful for students. The item with the highest mean was, “I found it helpful to have weekly action items laid out for me.” This item had a mean score of 4.83, which was close to ‘agree.’ The item, “Having specific weekly goals encouraged me to take action to start my thesis” also had a high mean score of 4.33. Mean responses to all questions were on the positive end of the Likert scale which fell between slightly agree and agree.

I also asked questions about the format of Thesis Launch to determine whether the online program and text-message reminders were effective. Students indicated a preference for online resources as shown by the item, “Online resources are just as valuable as in-person resources.” This item had a mean score of 5.50 which represented a response midway between ‘agree’ and ‘strongly agree.’ The item, “I am more likely to use online resources than an in-person workshop or appointment” also had a high mean score of 5.00. Again, mean responses to all questions were on the positive end of the Likert scale and fell between slightly agree to strongly agree.

Weekly journals. There were 23 unique journal entries in Cycle 2. Students were asked what resources they used each week for Thesis Launch. Options included the weekly text message, Thesis Launch website, materials linked through the Thesis Launch website, in-person thesis workshop, online thesis workshop, individual in-person advising appointment, in-person advising walk-in, none, and students had the ability to write in other resources used. The text message reminders were the most common answer with 17/23 journals referencing the weekly text messages as a helpful resource. The Thesis Launch website and the materials linked through the Thesis Launch website were also common responses with 12/23 and 13/23 respectively. Thesis workshops, both in-person and online, were only referenced in five journals total. Additionally, three journals mentioned an individual in-person advising appointment and two journals mentioned an advising walk-in session.

In Week 1, students were asked to reflect with the prompt, “Why is completing a thesis important to you? Learning job skills? Collaborating with experts? Personal perseverance? Completing a challenge? Write down why it’s important to you. You’ll want to revisit this later when you’re working on your thesis.” Many students indicated they had not explicitly thought this through prior to being asked. In the weekly journal, one student reflected, “Writing the statement reaffirmed why I am doing this project. I already knew most of what I wrote, but now that it is on paper it somehow seems more tangible, as if my thesis experience has actually begun.” Throughout the program, many students suggested Thesis Launch helped them stay on track and made the thesis process a priority. This also helped build self-efficacy, as illustrated by one student who wrote, “I

feel comfortable with where I am now and I think if I continue at this pace I'll be able to start my thesis early (which will be a huge weight off my shoulders)!"

Interviews. At the conclusion of the Cycle 2 pilot for Thesis Launch, I conducted two semi-structured interviews. I used purposive sampling to recruit two students who completed the program because I wanted to obtain feedback from students who had experienced the full program.

The two main themes that emerged were self-efficacy and small wins. Both students talked about having low self-efficacy before participating in Thesis Launch and seeing their self-efficacy grow by the end of the intervention. When reflecting on how she felt before Thesis Launch, one student said,

I really wasn't getting going on [my thesis]t because I didn't really know how to talk to professors about it, and I felt like I wasn't really qualified to be doing any sort of thesis work. That if I went to a professor, they would just laugh at me. By the end of the Thesis Launch program, this same student had changed her perceptions, "Yeah, and I have confidence that I will be able to complete a thesis from [what I started in Thesis Launch]. I'm not worried about not graduating from Barrett or anything like that." She was showing a clear progression from when she started Thesis Launch to when she finished. By the end, she believed in her ability to complete an honors thesis and graduate with honors.

The other main theme that emerged was small wins. Both students expressed that they saw themselves making progress towards the larger goal of starting the honors thesis by participating in Thesis Launch. One student shared, "The last three weeks were starting to speed up. Basically, it was nice to be able to show that I was making some

progress on creating my thesis rather than no progress at all.” Both students appreciated having tasks laid out for them to help them move forward with thesis work. The other student felt a small win during particular week,

I think the professors and figuring out faculty was a big turning point because I remember looking through the thesis projects, past ones, and doing a brainstorming sheet and still just feeling like you have an idea, but there’s no way you can actually make a thesis out of this. But as soon as I started looking at professors then I felt there’s actually people out there who are onboard with what I want to do.

Both students observed small wins, which helped motivate them to push further into the thesis work.

Prospectus submission. Students submitted a prospectus proposal to formally begin their thesis with the honors college. For the participants, 16.00% submitted their prospectus early (4/25). Reviewing the larger student population, 10.94% submitted their prospectus early (175/1600). This cycle had a small sample size so a comparison was not drawn at that point in time.

Discussion. Results from Cycle 2 were encouraging. They showed that students who participated in the Thesis Launch pilot project demonstrated increased self-efficacy to complete the honors thesis. Qualitative data from the interviews and weekly journals also supported this interpretation. Students’ reflections in the weekly journals helped them to see the progress they were making and built efficacy for completing the honors thesis.

Cycle 2 participants found value in having weekly action items laid out for them. Of the participants, 76% entered the program feeling like they did not know where to start, and Thesis Launch assisted them in beginning their efforts. The structure helped them experience small wins and build momentum on the thesis journey. Cycle 2 also showed that students thought online resources were just as valuable as in-person resources, and they were more likely to use online resources than in-person ones. Students found the text messages helpful, but they did not necessarily prompt immediate action. Instead, the students used the texts as reminders that kept thesis-related tasks as a priority for participants.

Cycle 2 Implications. Students who participated in Thesis Launch found value in the program. Pilot testing the intervention prior to the dissertation study was incredibly valuable. It appeared that I was on the right track with Thesis Launch, and I used this information to refine the program and instruments for the dissertation study.

Participants who completed the intervention liked the program so much that one asked if she could share it with her friends. Having students explain the program to other students was a great idea, and I utilized the summer prior to the dissertation study to create a video explaining the program to students. I wanted to share how other students used the program, and the video provided a way for past participants to share with future participants. For example, several participants recommended looking ahead at the upcoming weeks and writing tasks into their planners to treat it like regular homework.

When creating the intervention, I expected students to access the online resources on their phones through the links sent in the text messages. Of the two students who were interviewed, neither used the text messages to access Thesis Launch materials. Instead,

the text messages served primarily as reminders. Based on this feedback, I rewrote the text messages to eliminate unnecessary links. Because the text messages were limited to 140 characters, this left more characters available for messages that may normalize uncertainty, inspire reflection, or encourage students to take action.

I also used lessons learned from Cycle 2 to improve the questionnaire. I had eight self-efficacy items in Cycle 2. I expanded this section of the survey for the dissertation study by developing three components within self-efficacy: thesis completion, prospectus completion, and working with professors. That way, I was able to review each component as well as the overall construct of thesis completion.

Finally, I updated the weekly journal. While participation in the journals was less than I hoped for, interviewed students showed appreciation for the journal. They liked having reflection time built into the program. I built in a more explicit discussion of the benefits of reflection to encourage more participation. I also updated the journal with a different question each week based on that week's theme and goals. This change allowed for a specific reflection each week to encourage deeper reflection on that week's goals.

Summary

Ultimately, the goal of this study was to help undergraduate honors students begin the honors thesis process. The honors thesis has been viewed as a large task with many moving pieces and uncertainty that occurred throughout the process. Although I could not remove all uncertainty for students, I aimed to help students build self-efficacy and make progress on the thesis by devising a step-by-step process to aid their efforts. By completing tasks and experiencing small wins, students built self-efficacy through performance accomplishments. Students saw progress being made through their

behaviors, and this changed their beliefs and expectations about their abilities. Reflection was used as a technique to assist students in seeing the change in themselves and the progress being made.

Working through multiple cycles of action research provided an opportunity to learn more about the problem and student population. I used the results from each cycle to inform the next cycle, and ultimately led to the creation of the Thesis Launch intervention. This intervention and the refined instruments have been presented in detail in chapter 3.

CHAPTER 3

METHOD

Completing an honors thesis has been the culminating experience for our undergraduate honors students. Yet as shown in Chapter 2, 76% of students suggested they did not know where to begin with the honors thesis process, so they put off taking action. Thesis Launch was a 6-week program designed to structure the steps of getting started to help students in this critical juncture.

The purpose of this chapter was to describe the methods used to develop the intervention and the methods used to collect and analyze data for the research study. I included the research questions because they guide the methods used. Next, I described the setting in which the research took place, the participants involved, and my role as the researcher. Then, I discussed the intervention, instruments, and data sources used and the procedure with a timeline. Finally, I included information on data analysis with attention paid to the credibility, validity, reliability, and strengths of the action research study.

Research Questions

This study was guided by four research questions. These research questions were refined through the previous cycles of action research:

RQ1: What barriers did students describe when beginning the honors thesis process, and how did the perception of those barriers change over time?

RQ2: How and to what extent did the Thesis Launch program affect student self-efficacy and completion of tasks connected to beginning the honors thesis?

RQ3: How and to what extent did technology help with scaling thesis preparation to a large audience?

RQ4: How and to what extent did students who participate in Thesis Launch begin early on their honors thesis work?

Setting

This study took place at an honors college at a large, Research I university in the American Southwest. As of fall 2016, this honors college had approximately 7,000 undergraduate students, and honors students represent all majors offered at the university. Approximately 90% percent of students entered the college as traditional freshmen directly out of high school, and ten percent entered as upper-division transfer students. The college had a fairly even split of male and female students with 47.9% male and 52.1% female. Table 2 shows the demographics of the honors college compared to those of the university at large (Arizona State University, 2016; Barrett, The Honors College, 2016).

Table 2

Ethnicity Demographics of the Honors College and the University

	White	Hispanic or Latino	Black or African American	Native American or American Indian	Asian/ Pacific Islander	Other
Honors College	58.7%	18.2%	2.2%	0.6%	13.3%	7.0%
University	50.5%	21.7%	4.3%	1.3%	6.8%	15.4%

All honors students had an assigned professional honors advisor, a professional advisor in the major, and access to a faculty advisor. This accessibility provided multiple layers of academic support for students. In the study, the intervention was provided through the honors advising office. Completing an undergraduate honors thesis was a

requirement to graduate from the honors college, and honors advising educated students about the thesis process and tracked students' progress through the thesis. All students were required to meet with honors advisors to discuss the thesis before beginning, so it was a natural fit for honors advising personnel to lead an intervention designed to help students begin the honors thesis process.

Participants

Purposive sampling was used to select participants. Purposive sampling was used because the goal was to find participants that were part of a specific group that could provide the best insights into what was being studied. Further, purposive sampling increased transferability (Teddlie & Yu, 2007). The target population was junior honors students who had not yet begun the honors thesis. The honors college required student to spend two semesters working on a thesis, with most students choosing to complete the thesis during their senior year. Therefore, I wanted to focus on students before they began the thesis, which required juniors to be the target population. I accessed a list of students with an anticipated graduation date of spring 2020. I examined the list and removed students who have submitted a prospectus, submitted a thesis, or were enrolled in thesis credit. This removed students who had already begun their honors thesis. This left 1,002 students in the targeted population. Next, I utilized purposive random sampling which “involves taking a random sample of a small number of units from a much larger target population” (Teddlie & Yu, 2007, p. 90).

From the 1,002 students in the targeted population, a group of 366 students were invited to participate in Thesis Launch. Thirty-one students initially signed up and took

some action during the intervention, but 13 ultimately chose to complete the intervention. Participants who completed the study received a research incentive of a \$20 gift card.

Student participants had a wide variety of majors with 25 different majors represented. The average age of participants was approximately 20 years old. The percentage of female and male students who chose to participate was skewed more to females than males with 87.1% female and 12.9% male. The ethnicity of students who chose to participate varied from the larger student population with a higher representation of Hispanic or Latino students in Thesis Launch. See Table 3.

Table 3

Ethnicity Demographics of the Honors College and Thesis Launch Participants

	White	Hispanic or Latino	Black or African American	Native American or American Indian	Asian/ Pacific Islander	Other
Thesis Launch Participants (n=31)	67.7%	22.6%	0.0%	0.0%	9.7%	0.0%
Honors College (n=7,236)	58.7%	18.2%	2.2%	0.6%	13.3%	7.0%

Role of the Researcher

In addition to my role as an administrator and advisor in the honors advising office, I was also the researcher leading this intervention. Being embedded in the context was common for action research dissertations (Herr & Anderson, 2014; Mertler, 2014). By being part of the college that I was studying, I had a deep understanding of the context

and the students we served. This allowed me to design an intervention that addresses a problem specific to my context with a solution unique to the context. This made me an insider; the intervention was designed to be a program that was done *with* the students not *to* them or *on* them (Herr & Anderson, 2014).

I designed a 6-week program called Thesis Launch, which included creating goals and tasks for each week. This involved using some already-available materials from the college as well as creating new materials specific to Thesis Launch. To make Thesis Launch convenient for students to access, I created a website that had a separate webpage for each week of the intervention that housed materials needed for each week. I also wrote text messages and reminder emails for each week to share the materials with participants and keep students on-track with the intervention. Finally, I held office hours where students will be able to meet for additional advisement and support while participating in the intervention.

As part of the action research process, I collected data throughout the study. I administered a pre- and post-intervention survey to all participants. Each week, I asked students to reflect on their participation in a weekly online reflection journal. Additionally, ten students participated in interviews where I served as the interviewer. Finally, I conducted the analysis of the data. Because I was the researcher who administered and interpreted the data, I used multiple data sources to reduce bias. This was a typical approach in action research studies (Mertler, 2014).

Intervention

Thesis Launch was a 6-week intervention that was designed to help students begin the honors thesis process. This intervention was based on what was learned through

previous cycles of action research. Students often saw the honors thesis as a large task that felt unstructured and insurmountable. The Thesis Launch approach broke up this large, unstructured task into small, weekly action items designed to provide structure and support for students as they began the thesis process. The goal of Thesis Launch was to walk students step-by-step through the process of learning about the honors thesis, brainstorming ideas, exploring professors with whom to work, and approaching professors to join a thesis committee.

Outline of the 6-week program. Each week of Thesis Launch was carefully designed to assist students through common thesis tasks, and each week was given a theme. Week 1 was Learn, Week 2 was Explore, Week 3 was Envision, Week 4 was Prepare, Week 5 was Collaborate and Persevere, and Week 6 was Launch. See a brief video I created of what to expect here: <https://www.youtube.com/watch?v=y2kKxf9IH-A&feature=youtu.be>.

In Week 1: Learn, students learned more about the thesis process as a whole by completing a thesis workshop. Thesis workshops will be discussed in more depth below. Additionally, students were asked to reflect on why completing a thesis was important to them. Completing an undergraduate thesis was a challenge, so by reflecting on the value of the thesis, students were building motivation for undertaking this task.

In Week 2: Explore, students reviewed examples of past projects in the online digital repository. Honors students were in all majors at the university and thesis projects represented a wide range of topics. Additionally, the honors college did not set universal requirements for style, formatting, length, etc. These guidelines were set by each student's faculty committee. Thus, seeing examples helped students conceptualize what

an undergraduate thesis looks like. Students also created a list of professors with whom they were interested in working. Students could use professors from previous classes, professors listed on thesis projects from the digital repository, professors from online listings of honors faculty, and so on. Students were asked to reflect on how the thesis fit in with their future goals, and to think about why professors may choose to work with students on the thesis.

In Week 3: Envision, students were asked to brainstorm thesis ideas with a spirit of flexibility in mind. Students were encouraged to come up with potential thesis ideas as well as build on professor research interests. Although some students will complete a thesis based on an individual idea, many students will collaborate with professors to advance research projects in which the professors are already involved. During this week, students were asked to brainstorm about a possible thesis including components such as research interests, possible research questions, and gaps in knowledge about the topic. Complete details about the brainstorm process including prompts and so on are provided in Appendix D. See Appendix D. By having students create brainstorm pages based on professor research interests, students saw how their thesis could be aligned with others' research interests. Additionally, students were asked to reflect on why they are asked to create multiple ideas for the thesis, and to think about how they may pivot if their thesis plans need to change.

In Week 4: Prepare, students developed and wrote an elevator pitch. This was an opportunity for the student to practice talking about research ideas. Additionally, students crafted an introduction email specific to each professor to whom they planned to contact, and students emailed professors. Students used a template and samples that included

prompts such as a personal introduction, connection with the professor's area of research, related research or class projects already undertaken, and so on. These prompts and components emphasized the importance of relating the pitch to the professor's own research and areas of expertise. See Appendix E for the complete student resource to create an elevator pitch and email introduction. Students reported feeling trepidation about reaching out to a professor that they did not know. This was discussed as a typical part of the process. Students were asked to reflect on their comfort level when talking with professors, and to think about how they could be best prepared for those interactions.

In Week 5: Collaborate and Persevere, students met with professors to discuss research ideas for the thesis. Students used the resources from past weeks to prepare for these meetings. This week had two descriptors, collaborate and persevere, and students were primed that this was a process that may need to be repeated. If a professor was not a match, students asked for referrals to other professors, and students could then capitalize on using the already known process of researching professors and developing research ideas to pitch. Students were asked to reflect on their meetings with professors to improve for the next time.

In Week 6: Launch, students wrote their prospectus using the Prospectus Planning Page. The prospectus was the honors college's required proposal to officially begin the honors thesis. The prospectus included signatures from the thesis director and second committee member and a summary of the project. Students were provided a Prospectus Planning Page to help them develop a robust summary that includes goals for the project, research required, regular meetings with the thesis director and second committee

member, and a two-semester timeline. See Appendix F for the Prospectus Planning Page. Students reflected on what they learned throughout this process. They were also asked to think about how the thesis process related to career competencies and how to talk about skills gained through the thesis process for future graduate school applications or job interviews.

The whole intervention process is summarized by week in Table 4. See Table 4.

Table 4

Thesis Launch Weekly Outline

Weekly Theme	Weekly Goal	Weekly Resources
Week 1: Learn	Complete a thesis workshop. Reflect on why completing a thesis is important to you.	Thesis workshops: in-person and online options.
Week 2: Explore	Review 5 thesis projects in the online digital repository and take notes. Create a list of professors that may be potential thesis committee members. Reflect on how you will pivot if your Plan A does not work out.	Online digital repository of thesis projects, professor information in online directory.
Week 3: Envision	Complete one brainstorm page with your idea. Complete second (or more) brainstorm page based on professor research areas.	Brainstorm page.
Week 4: Prepare	Write an elevator pitch. Write an introduction email for each professor you want to contact. Send introduction emails to professors.	Elevator pitch template. Introduction email template and sample.

	Reflect on how comfortable you are communicating with professors.	
Week 5: Collaborate and Persevere	Prepare for meetings with professors. Meet with professors. Ask for referrals. Repeat. Reflect on meetings with professors.	Review resources from past weeks.
Week 6: Launch	Write prospectus summary and file prospectus form. Reflect on relationship of thesis to career competencies.	Prospectus form. Prospectus Planning Page.

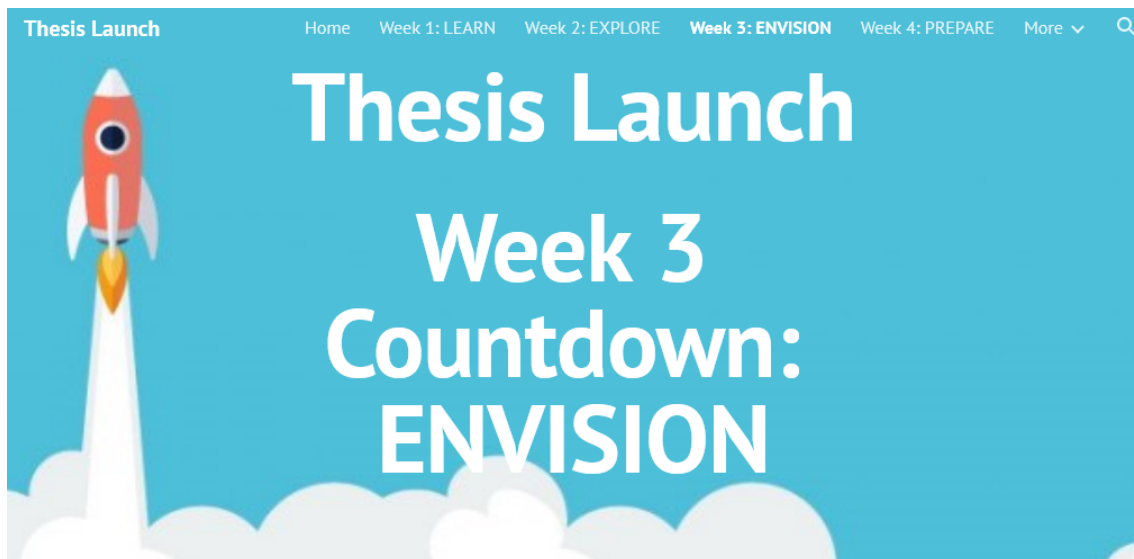
Thesis workshop. The first week of Thesis Launch provided students with an opportunity to complete a thesis workshop. Thesis workshops had a long history in the college and had been available for approximately ten years. They started as an optional hour-long lecture by an honors professor with support from honors advisors and approximately two to three workshops were offered each semester. In the thesis workshops, students heard about the benefits of completing a thesis and examples of past projects. In 2013, the thesis workshop became a mandatory requirement for all students to complete before beginning their thesis. At this time, the thesis workshop was revised so that it could be completed in-person or online. The current, in-person workshop was led by an honors professor with support from an honors advisor and a student speaker, and approximately five to six were offered each semester. The workshop could also be completed anytime online through several self-paced modules. In a short span of time, attendance went from approximately 50 students per year to several hundred, and the online option quickly became the most popular option for students. Offering the thesis

workshop both in-person and online allows the college to accommodate upwards of 1,000 students per year, and it allows students to choose the format that works best for their schedules. For the 2016-2017 academic year, 293 students completed a thesis workshop in-person, and 556 students completed a thesis workshop online, so more students opted to complete the workshop online.

The college recognized the value of completing a thesis workshop by making a thesis workshop required, and advisors encouraged second-year students to attend a thesis workshop to learn about the thesis early. Nevertheless, many students put off attending a thesis workshop. For example, in early fall 2017, only 28% of that year's juniors had completed a thesis workshop. Therefore, to support college goals and to ensure that students in Thesis Launch had participated in this important step, I included the thesis workshop as the first step of Thesis Launch.

Website. Because of the size of the honors college, I needed to make Thesis Launch scalable to a larger student population. To enable this process, I conducted the program through a website. As a result, the materials were accessible and available to an unlimited number of students at all times of the day. This allowed for greater scaling than a fully in-person based intervention. For this action research study, I designed the Thesis Launch website using Google Sites. The site had a separate page for each week of the 6-week program. Each page was designed to be mobile-device-friendly and simple. The Thesis Launch website can be viewed at:

<https://sites.google.com/view/thesislaunch/home>, and each weekly page had a navigation link at the top of the site. Each week was designed around the theme of “launch,” with a weekly 3-2-1 countdown. Figure 6 shows a sample of the website.



To Do List: 3-2-1-LAUNCH!

3) Complete one brainstorm page with an idea of your own. (Feel free to do more than one!)

- Resource: [Brainstorm worksheet](#)

2) Complete a second brainstorm page with an idea based on the research of a professor that you looked up last week. (Feel free to do several!)

- Resource: Brainstorm worksheet
- Approach your ideas with a spirit of flexibility. Your topic will likely change and evolve in the coming weeks as you collaborate with faculty members.

1) Complete your Week 3 [online reflection journal](#).

- What is my Plan A and my Plan B for my thesis work? What can I learn from joining a professor's research or a professor's ongoing project?

Questions about Thesis Launch or the research study? Contact Trisha Eardley at Trisha.Eardley@asu.edu

Figure 6. Thesis Launch Website, Week 3 Countdown: ENVISION. From <https://sites.google.com/view/thesislaunch/week-3-envision>.

Again, the idea was to provide students simple, “doable” weekly action items. Week 3 served the dual purpose of guiding students through the process of thinking through a research idea and introducing students to the idea of building on a professor’s research.

Reminders. Again, with scaling in mind, text messages were the primary communication tool to move students through Thesis Launch. Students gave permission to receive weekly text messages while participating in Thesis Launch. I used

Remind.com to coordinate the text messages. Remind was a free, online tool designed for educators. Remind limited each message to 140 characters, so my messages had to be concise.

Students received two to three text messages per week. The first introduced the weekly goal and links to the corresponding web page. Again, this was why the website needed to be mobile-device-friendly because students were linking to the site from text messages on their phones. The second and third text messages were reminders and encouragement to work through that week's goals and materials. For example, one text message was, "[Thesis Launch, WEEK 5](#): Time to meet with professors. Practice your elevator pitch and go confidently forward. You've got this!" An example of a follow-up text message is, "Have you had your first professor meeting? How about your second? Most students will meet with several professors before finding a thesis director." See Appendix G for the complete set of text messages and the schedule of when they were sent.

Email communications were also utilized. Students were recruited and sent the consent materials via email. I also sent weekly email reminders and updates throughout the program.

Office hours. Finally, everything above was supplemented by in-person office hour availability. Although it was important for the size of our student population to be able to scale this intervention for the future, it was equally important for advisors to be available to meet the needs of our students in multiple formats. For this intervention, I held regular office hours where students could drop-in to discuss Thesis Launch or other thesis concerns. Students were informed of office hour availability via text messages and

emails, and the office hours were held in the honors advising office. Because students were familiar with the honors advising office and it was centrally located on campus, this location was a convenient option.

Instruments and Data Sources

Because this was a mixed methods action research study, the instruments and data sources represent both quantitative and qualitative data. Specifically, this was a concurrent mixed methods action research design. That means that I collected both quantitative and qualitative data, analyzed each separately as the data became available, and then brought the results together with the goal of obtaining complementarity between the data sources (Ivankova, 2015). Table 5 shows how research questions align with the instruments and data sources that were used in this project.

Table 5

Alignment of Data Sources to Research Questions

Research questions	Survey	Student journals	Interviews	Prospectus submission
RQ1: What barriers did students describe when beginning the honors thesis process, and how did the perception of those barriers change over time?	X	X	X	
RQ2: How and to what extent did the Thesis Launch program affect student self-efficacy and completion of tasks connected to beginning the honors thesis?	X	X	X	
RQ3: How and to what extent did technology help with scaling thesis preparation to a large audience?	X	X	X	

RQ4: How and to what extent did students who participate in Thesis Launch begin early on their honors thesis work?			X	X

Survey. Both a pre-intervention questionnaire and a post-intervention questionnaire were developed for Thesis Launch. Although there was a great deal of overlap between the two questionnaires, additional sections were added for the post-intervention questionnaire. The pre- and post-intervention questionnaire both included seven questions on perceived barriers to begin the thesis and fifteen questions on self-efficacy. The pre-intervention questionnaire also included seven questions on demographic information. The post-intervention questionnaire included five questions on task completion related to small wins, five questions on technology, and six questions on Thesis Launch resources. The pre-intervention questionnaire consisted of 30 questions, and the post-intervention questionnaire consisted of 46 questions.

For the constructs of perceived barriers, self-efficacy, task completion with small wins, and technology, a 6-point Likert Scale was used where 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, 1 = *Strongly Disagree*. A 6-point Likert scale was chosen with half of the scores on the upper end and half of the scores on the higher end to follow the recommendations for a valid and reliable Likert scale (Edmondson, Edwards, & Boyer, 2012), and to allow for greater variability in the scores. I also consciously chose a 6-point scale without a mid-point option to ensure that respondents choose an upper or lower option (Miller, n.d.). I implemented the survey using Google Forms, and each construct had its own section to make clear to the respondent the construct to which the items referred. Additionally, I wrote all items from

a first-person point of view. For example, the self-efficacy construct consisted of fifteen items with five items on beginning a thesis, five items on completing a thesis, and five items on working with professors for the thesis. A sample item from the self-efficacy section is, “I am confident in my ability to finish my honors thesis,” and students will respond using the 6-point Likert scale. Another example was, “Collaborating with professors is something I am prepared to do for my honors thesis.” The perceived barriers section had six questions. Two sample items from the perceived barriers section were, “I am unsure how to approach professors about the honors thesis” and “I feel overwhelmed with the honors thesis process.” Looking at the technology section, a sample item was, “I took action on my thesis because of the weekly text reminders,” and again students answered using the same 6-point Likert scale. See Appendix H for the complete survey.

The survey was aligned with research questions one, two, and three with the goal of assessing barriers students faced, student self-efficacy, completion of tasks, and use of technology. I asked students to create a unique identifier so that the pre- and post-intervention responses could be matched for data analysis. A previous version of this survey was used in Cycle 2. Previously, I asked eight questions on self-efficacy to begin an honors thesis. Based on results, I realized that this was too broad, and I wanted to refine the survey to assess three components: a) self-efficacy to begin the honors thesis, b) self-efficacy to collaborate with professors on thesis work, and c) self-efficacy to complete the thesis. This led me to add questions within the self-efficacy section, which was how I ended up with five questions for each component in order to address each facet of self-efficacy. These questions were created following recommendations from Pintrich

and DeGroot (1990), and were subsequently tested on a group of students to ensure validity and credibility.

Weekly journals. Thesis Launch participants were asked to write in a weekly online reflection journal. The goal was to encourage self-reflection for participants while also collecting real-time data as participants were working through the program. I created this journal for Cycle 2 and at that time, the journal used the same four questions each week. Based on feedback from participants, I updated the journal prompts for the dissertation study. For simplicity, the initial questions remained the same each week, and then there were specific reflection questions tailored to each week's theme and goals.

The first question asked how much time the participant spent on thesis-related work. The second question asked which Thesis Launch resources were used that week, with multiple-choice responses. The final two questions were short answer and students were asked to respond by writing one to three sentences. The third asked students to respond to, "The week, I worked on..." The final prompt varied based on the week. For example, week 1 asked, "Why is completing an honors thesis important to me?" and week 6 queried, "What have I learned through this process? How could I talk about the thesis process in an interview for a job or a graduate program? Which of the top Career Competencies will I develop while working on my thesis?" As with the survey, I wrote the questions from a first-person perspective to aid in student reflection. See Appendix I for the complete set of Thesis Launch Online Reflection Journal prompts.

The online reflection journal was aligned with research questions one, two, and three with the goal of assessing barriers student faced, student self-efficacy, completion of tasks, and use of technology. I asked students to create a unique identifier so that

students' responses over the 6-week program could be matched during the data analysis process while retaining anonymity. The journal was created in Google Forms which allowed students to have a copy of their journal responses emailed to them so they had a record of their reflections.

Interviews. Additional qualitative data was obtained through face-to-face, semi-structured interviews with Thesis Launch participants. I conducted ten interviews at the conclusion of the Thesis Launch program. The interview questions were aligned with all research questions with the goal of assessing barriers students faced, student self-efficacy, completion of tasks, use of technology, and timeline for thesis progress. For example, a question about task completion was, "How did the weekly steps encourage you to do things differently than you might have done on your own?" A sample question about self-efficacy was, "Prior to participating, what barriers did you perceive that might prevent you from starting your thesis?" And a sample question for technology was, "Did the online and text message format of Thesis Launch make you more or less likely to participate each week? Please elaborate." The full set of interview questions is provided in Appendix J.

Prospectus submission. The Honors Advising Office tracked when students submitted their prospectus. I was interested in whether Thesis Launch helped students begin the honors thesis early, i.e., before the established Honors College deadline. I accessed a report and reviewed prospectus submissions based on graduation date. Students who were on-track to graduate by spring 2020 must turn in a prospectus by mid-September 2019. Therefore, I was interested in spring 2020 graduates who submitted a prospectus earlier. I used the previous semester's deadline in mid-February 2019. I

determined how many students in Thesis Launch submitted a prospectus by this deadline versus how many students in the general population met this early deadline. Review of this data aligned with research question four to determine to what extent participants began early on their honors thesis work.

Researcher journal. As the primary researcher and the practitioner for my study, I kept a journal to record data and insights as they happened throughout the study. During the intervention weeks, I made notes at least once per week and more often as events necessitated. Journal entries were observations or reflections related to the intervention and related to participant action and feedback.

Procedure

Preparation for the dissertation cycle of action research took place during summer 2018. Instruments and data collection procedures were prepared, and all of the materials and resources for Thesis Launch were created and ready for the beginning of the fall 2018 semester. Student participants were recruited in early fall 2018. I accessed a list of all current juniors and determined the population I invited to participate. A recruitment email was sent to the potential to students from the sample population, and when students indicated interest in participating, I asked them to electronically consent to participate in the study. See Appendix K for the consent form.

Participants received the pre-intervention survey prior to beginning Week 1 of Thesis Launch. The Thesis Launch program ran for six weeks. Each week, I sent students two to three text messages with weekly goals and action items. I used Remind.com to ensure that all participants received these messages at the same time each week. A weekly email reminder also went out with that week's goals. Participants were asked to

complete an online reflection journal for each week of Thesis Launch. Students were reminded to complete their journal via text message. Each week, I offered Thesis Launch office hours when students were invited to come in-person for one-on-one advising and help. At the end of the 6-week program, I sent students the post-intervention survey, and I reached out to participants to invite students to participate in an interview. These interviews took place following the conclusion of Thesis Launch so students had experienced the full program. By the end of the fall 2018 semester, I collected the pre- and post-intervention survey data, weekly online reflection journals, and participant interviews. I then began analyzing this data. Data analysis procedures are discussed below. The final data source was reviewing prospectus submissions. The final prospectus deadline was in February 2019, so I waited for that deadline before analyzing prospectus submission data.

Timeline

Thesis Launch was aligned with the college's priority prospectus deadline. For each semester, the college had a priority prospectus deadline and a final prospectus deadline. Advising recommended the priority date to encourage students to take action and start talking early with professors with whom they may have wanted to work. For students who planned to start their honors thesis in spring 2019, the priority prospectus deadline was November 2, 2018 and the final prospectus deadline was February 15, 2019. The 6-week Thesis Launch program ended in time for students to meet that semester's priority prospectus deadline. See Table 6 for the specific timeline for each week of Thesis Launch.

Table 6

Thesis Launch Intervention Timeline

Dates	Week
September 16-22, 2018	Week 1: Learn
September 23-29, 2018	Week 2: Explore
September 30-October 6, 2018	Week 3: Envision
October 7-13, 2018	Week 4: Prepare
October 14-20, 2018	Week 5: Collaborate & Persevere
October 21-27, 2018	Week 6: Launch
October 28-November 3, 2018	Final follow-up and Priority Prospectus Deadline of November 2, 2018
February 15, 2019	Final Prospectus Deadline

Once the 6-week intervention was complete, I conducted interviews with participants. My focus then moved to analyzing the various data. Data analysis took place primarily from November-February 2018. See Table 7 for a complete timeline of actions and procedures.

Table 7

Timeline and Procedures

Timeframe	Actions	Procedures
June-August	Prepare for intervention	Prepare materials for intervention. Prepare materials for data collection.
September	Recruit participants	Invite juniors who have not started the thesis to join the study. Request participants to sign a letter of consent.

September	Data collection	Administer pre-survey.
September- November	Intervention	Share Thesis Launch materials and resources with participants. Offer regular office hours.
November	Data collection	Administer post-survey. Conduct semi-structured interviews with participants.
November- February	Data analysis	Analyze data from pre- and post-survey. Analyze data from interviews.
February	Data collection	Access prospectus submissions for participants and non-participants.
February	Data analysis	Analyze prospectus submission data.

Data Analysis

A concurrent mixed methods action research design was used. See Figure 7. That meant I was collecting both quantitative and qualitative data simultaneously, and I analyzed each data source separately. The results were combined and reviewed together to look for complementarity between data sources.

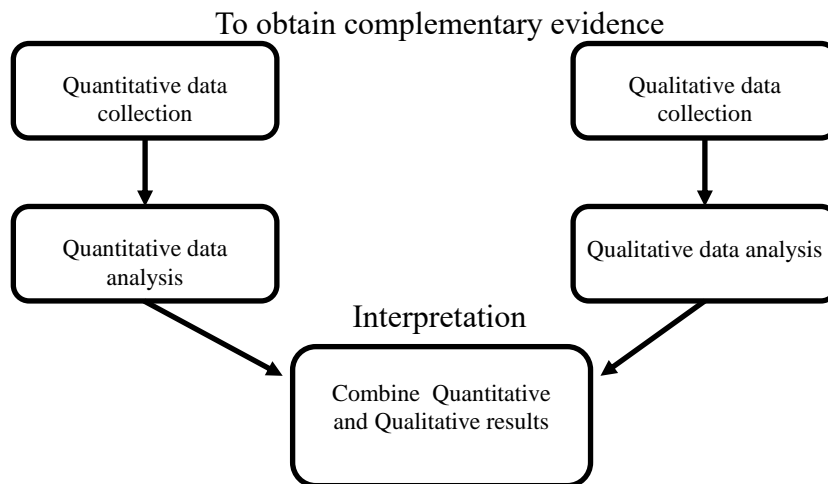


Figure 7. Model of Concurrent Mixed Methods Action Research Design. Adapted from Mixed Methods Applications in Action Research: From Methods to Community Action, by N. V. Ivankova, 2015, p. 130.

Quantitative data. The pre- and post-intervention surveys provided quantitative results for items on self-efficacy and barriers to beginning the honors thesis. These items were analyzed using SPSS to review descriptive statistics such as mean, median, and standard deviation. I ran a reliability analysis using Cronbach's alpha measure, and then analyzed using analysis of variance (ANOVA). Self-efficacy was a variable that enabled behaviors to change. It helped define future thesis completion. I examined whether there was an increase in self-efficacy as an indicator of student progress on the honors thesis.

The post-intervention survey also provided quantitative results for items on small wins and technology. I presented these using descriptive statistics only. Additionally, I reviewed thesis prospectus submissions to determine how many participants submitted the thesis prospectus by the deadlines.

Qualitative data. The student journals and interviews provided qualitative data. Additional qualitative data came from open-responses in the pre- and post-survey. I reviewed this data using the constant comparative method, part of a grounded theory approach (Flick, 2014). This means that I was continuously comparing all elements of the data to itself and other elements. This began with the coding process using HyperResearch as a tool in the process. For the review process, I: (a) conducted the interview, made audio recording and took notes, (b) sent the audio file out for transcription, (c) read and re-read the transcription and interviewer notes, (d) created initial codes, (e) reviewed codes again and compared to other elements within this

interview and others to create categories of codes, (f) gathered categories into themes, and (g) used those themes to make assertions (Saldaña, 2016).

I was interested to see if students discussed self-efficacy in their journals or interviews. These sources also provided data on whether or not students were completing thesis-related tasks. I reviewed the data to see if these themes or others emerged.

Validity, Reliability, Credibility, and Strengths

Reliability. Reliability was the consistency of an instrument, and it must be addressed first before validity could be established (Fraenkel & Wallen, 2005). I tested my survey in Cycle 2 and determined that I need to make changes to increase reliability. For example, additional questions were added to the self-efficacy section in an effort to increase reliability of the instrument (Thayer-Hart, Dykema, Elver, Schaeffer, & Stevenson, 2010). The self-efficacy section included components on self-efficacy to begin the honors thesis, to collaborate with professors, and to complete the thesis process. Cronbach's alpha measure was computed for each sub-construct as well as the construct as a whole to determine internal consistency (Fraenkel & Wallen, 2005). Generally, a Cronbach's alpha score of 0.70 and higher was considered acceptable (George & Mallery, 2003).

Validity. Validity referred to the appropriateness of the inferences made from the data. In other words, did the instrument measure what it is supposed to measure? In particular, internal validity looked at whether results were due to the dependent variables and not due to something else (Smith & Glass, 1987). In contrast, external validity looked at whether the results were generalizable to another setting (Teddle & Yu, 2007). Action research does not aim for generalizability but rather transferability. This was why action

research focuses on explaining the context so the reader could determine if the intervention was transferable to another context. This study had several threats to validity to consider including history, mortality, and the Hawthorne effect.

History. History referred to events that occur during the same time period as the intervention which could cause a change in the dependent variable (Smith & Glass, 1987). This intervention took place over six weeks, so there was significant time for participants to encounter other events that could contribute to their progress on targeted skills. For example, a student doing well in a class could be approached by the professor to join a research project. That could have helped the student make progress on starting the thesis, but that progress would not have been due to participating in Thesis Launch. I did not intend to use the pre- and post-intervention data collected through Thesis Launch to explain why students took action on the thesis. Rather, I hoped to use this data as part of a larger picture of how students made progress.

Mortality. Another potential threat to validity was mortality, otherwise known as attrition (Smith & Glass, 1987). Mortality was seen in Cycle 2, so it was a concern for the dissertation study. I made every effort to retain participants in my study. I sent reminders using various formats to encourage students to complete their participation in Thesis Launch. I also offered a small research incentive for students that completed the program.

Hawthorne effect. Finally, the Hawthorne effect was another potential threat to validity. The Hawthorne effect was when participants feel they are getting special treatment, so they act differently (Smith & Glass, 1987). It was possible that this effect may have happened during in-person sessions or during the interviews where students were interacting with me as the researcher. This was why I collected data from multiple

sources. For the online sessions, the survey, and the journal, participants were anonymous to me. Participants created a unique identifier so I did not know who was participating, and this helped to mitigate this threat.

Credibility. Credibility referred to the trustworthiness of the data, and generally referred to qualitative data sources (Gelo, Braakmann, & Benetka, 2008). I addressed credibility with well-defined research questions, reviewing relevant literature, selecting appropriate methods and data analysis, and employing rigorous ethical standards. I also followed Flick's (2014) strategies for increasing credibility, which included triangulation of different methods and data and a transparent audit trail. I reviewed multiple data sources for each research question to look for complementarity between the data. This included surveys, interviews, journals, and college data. For the audit trail, I kept clear notes on the steps I took to review the data such as steps taken when coding. Incorporating rich descriptions of the data also increased the credibility of my assertions.

Strengths. I have highlighted several strengths that increase reliability, validity, and credibility of this study. First, I employed a mixed methods approach collecting both quantitative and qualitative data. The quantitative data provided concrete numbers, and the qualitative data provided rich description. Second, I reviewed all data to look for complementarity between data sources. Complementarity provided greater support for the assertions being made. Third, the survey was tested in Cycle 2 and further refined before the dissertation study. Additionally, the journal prompts and semi-structured interview questions were also tested in Cycle 2 and refined for the dissertation study. This was done to ensure that reliable and valid instruments were used. Fourth, peer debriefing was used

to regularly check-in with colleagues not involved in the research to mitigate blind-spots, and I kept a clear audit trail documenting the steps taken during data analysis.

Summary

This study focused on undergraduate students at a large university honors college. I recruited participants who were in a position to begin the honors thesis early but needed additional support. The intervention, Thesis Launch, was a 6-week program that supported students to take action on thesis-related tasks early. Multiple modalities were used to engage participants throughout the program including in-person and online workshops, online resources, text message reminders, and advisor office hours. Additionally, multiple sources were used for data collection, such as a pre- and post-intervention survey, journals, interviews, and prospectus data, to achieve a mixed methods study. The data sources were carefully aligned to the research questions to maximize reliability, validity, and credibility.

CHAPTER 4

DATA ANALYSIS AND RESULTS

The project was carefully designed to collect a variety of data, with instruments that were refined and reviewed to ensure reliability, validity, and credibility. Data analysis reflected a concurrent mixed methods action research design, which meant I collected both quantitative and qualitative data simultaneously and analyzed each type of data separately in this chapter and brought them together, later, in the next chapter.

In this chapter, I laid out how both quantitative and qualitative data were reviewed and analyzed. First, I discussed quantitative data including the pre-and post-intervention survey, student journals, and thesis prospectus submission results. I then transitioned to qualitative data from interviews, student journals, and open-ended questions from the pre- and post-intervention survey.

Results from Quantitative Data

I collected quantitative data from a variety of sources. The pre- and post-intervention surveys provided quantitative results for items on self-efficacy and student perceptions of barriers about beginning the honors thesis. The post-intervention survey also provided quantitative results for items on small wins theory and the utilization of technology. Thirty-one students participated in Thesis Launch. All completed the pre-intervention survey and 13 of the participants also completed the post-intervention survey. Additionally, I reviewed information from the student journals. Finally, I reviewed thesis prospectus submissions to determine how many participants submitted the thesis prospectus by the deadlines.

Self-efficacy and perceived barriers about beginning the honors thesis. The pre- and post-intervention surveys provided quantitative results for items on self-efficacy and perceived barriers about beginning the honors thesis. These items were analyzed using SPSS to provide descriptive statistics such as mean and standard deviation. Reliability for the self-efficacy and perceived barriers items were analyzed using Cronbach's alpha measure. Once reliability was established, the pre- and post-intervention questions were analyzed using analysis of variance (ANOVA).

Reliability of self-efficacy components. One of the first steps for the self-efficacy items was to conduct a reliability analysis. Cronbach's alpha measure was computed for each self-efficacy component to determine internal consistency (Fraenkel & Wallen, 2005). See Table 8 for the reliability results.

Table 8

<i>Cronbach's Alpha Estimates of Internal Reliability, Self-Efficacy Scores (n =13)</i>		
Self-Efficacy Factor	Within Factor Items	Coefficient Alpha
Begin Thesis	Items 9, 10, 11, 12, 13	0.88
Collaborate with Professors	Items 14, 15, 16, 17, 18	0.92
Complete Thesis	Items 19, 20, 21, 22, 23	0.96

Overall the self-efficacy items showed high internal reliability. This meant that students were answering questions in a consistent way. Looking at the components, the questions on self-efficacy to complete a thesis had the highest coefficient alpha, whereas the questions on self-efficacy to begin a thesis had a lower coefficient alpha. Generally, a Cronbach's alpha score of 0.70 and higher was considered acceptable (George & Mallery, 2003). Thus, the components all showed acceptable levels of reliability. Further, as part of the SPSS analysis, output indicated Cronbach's alpha scores would not improve by deleting any items, so I retained all questions for further analysis.

Analysis of self-efficacy to begin the honors thesis. Once reliability was established, I took a closer look at descriptive statistics for the pre- and post-intervention components on self-efficacy. A Likert Scale was used for these items where 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, 1 = *Strongly Disagree*. See Table 9 for the means and standard deviations for the self-efficacy component scores. Overall, students indicated high self-efficacy entering and leaving the program.

Table 9

Descriptive Statistics, Survey Self-Efficacy Scores (n=13)

Self-Efficacy Component	Pre- Intervention Mean	Pre- Intervention Standard Deviation	Post- Intervention Mean	Post- Intervention Standard Deviation
Begin Thesis	4.22	1.11	4.59	1.16
Collaborate with Professors	4.54	1.18	5.23	0.76
Complete Thesis	5.34	0.78	5.46	0.91

The largest change in mean scores was for the items measuring student self-efficacy to collaborate with professors for the honors thesis. That mean rose from 4.54 at the pre-intervention to 5.23 on the post-intervention survey.

Self-efficacy was a variable that supported behavioral change. As a result, it anticipated that it would foster future thesis completion. I examined whether there was an increase in self-efficacy as an indicator of student progress on the honors thesis. In all, 13 participants completed both the pre- and post-intervention survey. Their responses were used in the repeated measures analysis of variance (ANOVA) to determine whether there

were changes in the self-efficacy components over time. I conducted repeated measures ANOVAs for each of the self-efficacy components. The results for self-efficacy to begin the honors thesis and to complete the thesis were not significant. Specifically, the repeated measures ANOVA for self-efficacy to begin the thesis was not significant $F(1, 12) = 2.05, p > 0.05$. Similarly, the repeated measures ANOVA for self-efficacy to complete the thesis was not significant $F(1, 12) = 0.26, p > 0.05$. All honors students entered the college knowing that an undergraduate thesis was a requirement for graduation, which may explain why self-efficacy to begin and complete a thesis had not changed significantly over the course of the intervention; it was already high.

A significant result was found when reviewing the repeated measures ANOVA for self-efficacy to collaborate with professors with $F(1, 12) = 9.13, p < 0.05$ and $\eta^2 = 0.43$ which was a large effect size using Cohen's criteria (Olejnik & Algina, 2000). For this construct, students showed a significant change in their self-efficacy to work with professors, which was a critical component of the honors thesis process.

Reliability of perceived barriers components. Students were asked to identify reasons why they had not begun the honors thesis. Table 10 showed the means and standard deviations of student perceptions of these barriers to begin the honors thesis. A Likert Scale was used where 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, 1 = *Strongly Disagree*. Cronbach's alpha score was computed to determine if these items showed internal reliability. There was an overall coefficient alpha score of 0.86, which showed students were answering questions in a consistent manner and the items demonstrated reliability. The pre-intervention items had a coefficient alpha score of 0.73, and the post-intervention items had a score of 0.92.

Again, a Cronbach's alpha score of 0.70 and higher was considered acceptable (George & Mallery, 2003).

Analysis of perceived barriers to begin the honors thesis. Descriptive statistics for these items were presented in Table 10. Items were listed by pre-intervention descending means. The items with the highest pre-intervention means were, "I feel overwhelmed with the honors thesis process" and "I feel anxious about the honors thesis process." These items had a mean score of 4.54 and 4.38 respectively on the pre-intervention survey. Both of these items fell above 'slightly agree' on the Likert scale. Mean responses to all questions were on the positive end of the Likert scale on the pre-intervention survey which meant participants agreed with all statements to some degree.

For the post-intervention survey, the items with the lowest mean post-intervention were, "I am unsure how to approach professors about the honors thesis" and "I don't know where to begin on the honors thesis process." These items had both a mean score of 1.62. These responses fell between 'strongly disagree' and 'disagree' on the Likert scale. Mean responses to all post-intervention questions were on the negative end of the Likert scale which meant participants disagreed with all statements to some extent. There was a noticeable change in student perception from the pre-intervention to the post-intervention.

Table 10

Descriptive Statistics of Student Barriers to Beginning the Honors Thesis (n =13)

	Pre- Intervention Mean	Pre- Intervention Standard Deviation	Post- Intervention Mean	Post- Intervention Standard Deviation
--	------------------------------	---	-------------------------------	--

I feel overwhelmed with the honors thesis process.	4.54	1.05	2.69	1.49
I feel anxious about the honors thesis process.	4.38	1.33	2.69	1.38
I am unsure how to approach professors about the honors thesis.	3.69	1.60	1.62	0.77
Procrastination keeps me from taking action on the honors thesis.	3.62	1.50	2.31	1.60
I don't know where to begin on the honors thesis process.	3.38	1.19	1.62	1.39
I don't have ideas for the honors thesis.	3.23	1.54	1.69	0.95

Participant responses to the statement, “I am unsure how to approach professors about the honors thesis,” changed the most. At the pre-intervention assessment, the mean score for this question was between ‘agree’ and ‘slightly agree.’ At the post-intervention, the mean score for this question was 2.07 points lower and between ‘strongly disagree’ and ‘disagree.’

For the perceived barriers items, it appeared there was a change in how students perceived their ability to move forward with thesis work. Thirteen of the 31 participants completed both the pre- and post-intervention survey items on perceived barriers to begin the honors thesis. I examined their responses using repeated measures analysis of variance (ANOVA) to determine whether there were changes in the students’ perceptions of barriers to begin the thesis over time. The $F(1, 12) = 24.36, p < 0.05$ was significant and $\eta^2 = .67$, which is a large effect size for a within-subjects’ effect (Olejnik & Algina,

2000). Based on these results, I was able to reject the null hypothesis and conclude that there was a significant difference in perceived barriers between the pre- and post-intervention survey. The larger within-subjects' effect size indicated that the difference in students' perception of thesis barriers was meaningful.

Small wins theory and scaling via technology. The post-intervention survey also provided quantitative results for items on small wins and technology. I presented these using descriptive statistics.

On the post-intervention assessment, I asked questions about task completion and small wins to determine whether this approach was helpful for students. A Likert Scale was used where 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, 1 = *Strongly Disagree*. In Table 11, I presented descriptive statistics for the small wins questions organized by descending means. The item with the highest mean was, "I felt like I accomplished something towards my goal of beginning my thesis by utilizing Thesis Launch." This item had a mean score of 5.85, which was close to 'strongly agree.' Mean responses to all questions were all on the positive end of the Likert scale and fell between 'agree' and 'strongly agree.' Thus, respondents indicated Thesis Launch was useful in helping them to make progress toward thesis completion.

Table 11

Descriptive Statistics, Post-Intervention Survey Small Wins Items (n =13)

	Mean	Standard Deviation
I felt like I accomplished something towards my goal of beginning my thesis by utilizing Thesis Launch.	5.85	0.38
I made progress on beginning my thesis by following the steps provided in Thesis Launch.	5.77	0.60

The work I did in Thesis Launch helped me build momentum to begin my thesis.	5.62	0.77
Completing small tasks pushed me to spend more time working on my thesis.	5.54	0.97
I found it helpful to have weekly action items that I was supposed to do.	5.38	1.04

I asked questions about the format of Thesis Launch to determine whether the online and text-message reminders were an effective way to scale the intervention. In Table 12, I provided descriptive statistics for the items pertaining to the technology component of the intervention, which were organized items by descending means. A Likert Scale was used where 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, 1 = *Strongly Disagree*. Students liked the format as shown by the item, “I like that Thesis Launch resources are primarily online and text based resources.” This mean score of 5.54 represented a response midway between ‘agree’ and ‘strongly agree.’ The item with the lowest mean was, “I took action on my thesis because of the weekly text reminder.” This item had a mean of 4.62, which was still positive between ‘slightly agree’ and ‘agree.’

Table 12

Descriptive Statistics, Post-Intervention Survey Technology Items (n = 13)

	Mean	Standard Deviation
I like that Thesis Launch resources are primarily online and text based resources.	5.54	0.66
It was helpful to have weekly action items sent to me each week.	5.38	0.87
Getting text message reminders is convenient to my lifestyle.	5.00	1.41

I am more likely to use online resources than an in-person workshop or appointment.	4.92	1.12
I took action on my thesis because of the weekly text reminders.	4.62	1.85

To dig deeper, I also asked questions on the post-intervention survey about the Thesis Launch resources. I was curious how often participants used different resources and how beneficial they perceived those resources to be. In Table 13, I have offered descriptive statistics for these items. For the frequency of use items, the Likert Scale was 4 = *Frequently*, 3 = *Sometimes*, 2 = *Rarely*, 1 = *Never*. Because the four anchors did not provide a smooth, continuous scale, median scores were reported. Text message reminders and the Thesis Launch website had the highest use with median scores of ‘Frequently’ used. The online thesis workshop had the lowest median use at ‘never.’ This was likely because the online workshop was not a required component, but one option to complete the Week 1 tasks.

I used a separate Likert Scale for items on how beneficial resources were. In this Likert Scale 4 = *Very Beneficial*, 3 = *Somewhat Beneficial*, 2 = *Slightly Beneficial*, 1 = *Not at All Beneficial*, and students were asked to skip items if they did not use the resource. Four of the items were seen as ‘Very Beneficial.’ These were the text message reminders, the Thesis Launch website, linked resources in the Thesis Launch program, and in-person resources.

Table 13

Descriptive Statistics, Post-Intervention Survey Resources Items (n = 13)

Resource	Median
----------	--------

Text message reminders	Frequency of use	4
	How beneficial	4
Thesis Launch website	Frequency of use	4
	How beneficial	4
Linked resources (Brainstorm exercise, Elevator pitch, FHA list, etc.)	Frequency of use	3
	How beneficial	4
Online thesis workshop	Frequency of use	1
	How beneficial	2
In-person resources (advising appointment, office hours, in-person thesis workshop, etc.)	Frequency of use	3
	How beneficial	4

Journals. Over the six weeks of Thesis Launch, 31 participants created 101 unique journal entries. All 31 students completed the Week 1 journal entry, 20 completed the Week 2 journal entry, 16 completed the Week 3 journal entry, 13 completed the Week 4 journal entry, 11 completed the Week 5 journal entry, and 10 completed the Week 6 journal entry. Students were asked what resources they used each week for Thesis Launch. Options included the text message reminders, Thesis Launch website, materials linked through the Thesis Launch website, in-person thesis workshop, online thesis workshop, individual in-person advising, none, and students had the ability to write in other resources used. The text message reminders were the most common answer with

87/101 journal entries indicating the student used the text message reminders. The Thesis Launch website and the materials linked through the Thesis Launch website were also common responses with 69/101 journal entries indicating use of the website or associated materials. Students offered 32 journal entries that mentioned using in-person advising as a resource. Few student journal entries mentioned the thesis workshop either online or in-person with only five and three mentions, respectively. When asked how much time students spent on thesis-related work each week, the average response was 55 minutes per week.

Thesis prospectus submission. The final quantitative data I gathered and analyzed were prospectus submissions. Students were required to submit a prospectus form with signatures from a thesis director and second committee member as well as a written proposal. I reviewed thesis prospectus submissions to determine how many participants submitted the thesis prospectus by the deadline in February. Students who met this deadline began the thesis a semester early. Looking at Thesis Launch participants, the data indicated 8/31 (25.80%) of participants had officially begun their thesis work early. The remaining juniors represented 113/1277 (8.84%) who began thesis work early. Furthermore, five additional participants indicated that they found a thesis director in their interviews. This means that 13/31 (41.94%) of Thesis Launch participants found a thesis committee early. There appeared to be a positive effect for the students who participated in Thesis Launch.

Results from Qualitative Data

I collected qualitative data from a variety of sources. Each week of Thesis Launch, participants were asked to write in an online journal. The participants created

101 unique journal entries over the six weeks of the program. Additionally, 10 students participated in semi-structured interviews at the end of the intervention. Finally, open-ended items on the pre- and post-intervention surveys allowed students to provide qualitative responses about barriers they perceived with respect to the thesis process and general feedback on their experiences with Thesis Launch.

All of this qualitative data was uploaded into HyperResearch for review and coding. I reviewed this data using the constant comparative method (Flick, 2014). This means that I was continuously comparing all elements of the data to itself and other elements. I was interested to determine whether students discussed self-efficacy in their journals or interviews. These sources also provided data on whether students were completing thesis-related tasks and how they perceived their thesis progress. I reviewed the data to determine what themes emerged.

In this section, I presented results from qualitative data. In Table 14, I have provided the theme-related components, themes, and assertions developed from the qualitative analysis. A total of 134 codes were employed in a first round of coding. These codes were reviewed again in a second round, compared to each other, and grouped into theme-related components. Subsequently, these theme-related components were used to develop my themes and assertions. Additionally, I assigned pseudonyms to participants to use in the discussion of qualitative results.

Table 14

Theme-Related Components, Themes, and Assertions Based on Interviews, Journal Entries, and Open-Ended Survey Responses

Theme-related components	Themes	Assertions
--------------------------	--------	------------

<p>1. There were many perceived barriers prior to starting thesis work.</p> <p>2. Students experienced thesis-related successes during Thesis Launch.</p> <p>3. Fewer perceived barriers were reported after completing Thesis Launch.</p>	<p>Perceiving barriers and overcoming those barriers</p>	<p>1. Participants overcame perceived barriers and reported fewer barriers after experiencing successes during Thesis Launch.</p>
<p>1. Levels of self-efficacy varied prior to participating in Thesis Launch.</p> <p>2. Students reported higher self-efficacy after completing Thesis Launch.</p> <p>3. Self-efficacy to connect with professors was developed through Thesis Launch.</p> <p>4. Students used multiple strategies to begin thesis work.</p> <p>5. Small wins helped students make progress on thesis goals.</p> <p>6. Structured reflection helped students see progress on thesis goals.</p>	<p>Building self-efficacy using various strategies</p>	<p>2. Utilizing Thesis Launch influenced student self-efficacy including (a) building self-efficacy to work with professors on the thesis and (b) providing strategies to begin thesis work.</p>
<p>1. Students appreciated the use of technology to present Thesis Launch materials and as reminders.</p> <p>2. Students preferred communication via text messages in Thesis Launch.</p>	<p>Using technology to learn and support navigation of thesis components</p>	<p>3. Students preferred an online, technology-based program as a means of learning and supporting their efforts.</p>
<p>1. Some students had completed thesis-related work prior to Thesis Launch.</p> <p>2. Student thesis timelines were individualized and</p>	<p>Customizing individual timelines for thesis work</p>	<p>4. Students began thesis work early, and students' thesis timelines changed based on work completed during Thesis Launch.</p>

varied depending on student progress.

1. Students utilized many of the resources provided by Thesis Launch.	Utilizing resources	5. Participants utilized and valued resources provided through Thesis Launch.
2. Thesis Launch resources encouraged students to take action on thesis-related tasks.		
3. Thesis Launch resources provided a model of how to begin thesis work.		

Perceiving barriers and overcoming those barriers. *Assertion 1: Participants overcame perceived barriers and reported fewer barriers after experiencing successes during Thesis Launch.* Participants mentioned barriers in the interviews, journals, and surveys. The following theme-related components comprised the theme that led to Assertion 1: (a) there were many perceived barriers prior to starting thesis work; (b) students experienced thesis-related successes during Thesis Launch; and (c) fewer perceived barriers were reported after completing Thesis Launch.

There were many perceived barriers prior to starting thesis work. Seventeen unique barriers were mentioned by students. The most common barriers mentioned included not having enough time to devote to thesis tasks, not having ideas for a thesis project, feeling overwhelmed, and concerns about approaching professors. These were barriers that students perceived as roadblocks to beginning thesis work. Scout expressed a sentiment echoed by several others when she said, “It’s easy to think, ‘Oh, this is such a big thing, I don’t want to start.’ I was definitely just a little bit overwhelmed.” Many

students expressed multiple barriers that kept them from beginning thesis work. Coco shared,

I knew I had to start working on it, but I didn't really know where to begin or who to really talk to or what I really wanted to do. I did actually think about it, it just stressed me out a lot. I think it was I did not know what I wanted to really focus on or what I was interested in or who to even talk to, to brainstorm ideas with. Yeah, because I was stressing. I was like, 'Oh, no. This is gonna take so much time.'

Tico was also concerned about the time commitment. Contacting professors was another barrier for her,

Definitely, the most intimidating part of the process upfront for me was I need to get professors. I was like, 'Ah, I have to talk to people and tell them about my work and hopefully they'll sign on for like a year. Oh my gosh.' I have a very busy schedule. I work about 30 to 35 hours a week here and I go to school. So it completely blew my mind.

Jack shared Tico's concern about contacting professors, and he had a lack of knowledge on the thesis process,

I think the biggest barrier would be ... how to contact professors and ask them to be a part of my thesis project, but then afterwards I wasn't sure specifically what steps I would take afterwards in working on my thesis. I was just a little bit confused as to the overall process of completing a thesis project and what that would look like.

Students shared a variety of barriers that kept them from beginning thesis work. These perceived barriers ranged from internal constraints such as feeling overwhelmed, stress, or anxiety about the process. They also experienced external constraints such as time limitations. It was common for participants to express multiple barriers that stymied thesis progress.

Students experienced thesis-related successes during Thesis Launch.

Participants shared successes that they experienced during Thesis Launch. These successes helped them overcome barriers. The most frequent success students experienced was contacting professors to discuss the thesis. This led many participants to find a thesis director. By experiencing success during participation in Thesis Launch, students were able to mitigate barriers that had previously kept them from beginning thesis work. Robbie shared her experience finding a thesis director and the challenges that she overcame to achieve that goal when she said, “I did find a director, which was actually super difficult. I had to contact people like crazy. I emailed about 20 people.” Hailey also found a thesis director which alleviated her worry about the thesis,

I've found a professor who would be willing to work with me. And it's a big deal, because I was worried about that. That was the biggest worry for me, so I've actually found someone who seems willing to work with me.

Charlie had not found a thesis director yet, but she had success connecting with professors. Through this success, she saw the benefits that professors can provide during this process when she suggested,

This week I met with one professor. I wasn't sure how it would go because this was my first time speaking one-on-one with faculty about my thesis project. She

let me know that she may be too busy right now to work on a thesis project, and my ideas seemed to merge better with that of two of her colleagues. She helped me gather classes I could take to learn more about my topic, as well as give me the guidelines for a thesis in the Linguistics department. Although we were not a match, she was so helpful in connecting me with other Linguistics faculty that might be a great match for me!

By experiencing successes during Thesis Launch, participants were able to overcome barriers that had previously prevented them from beginning thesis work. In particular as illustrated, here, students found faculty members with whom they could work, which had been one of the most-often mentioned barriers.

Fewer perceived barriers were reported after completing Thesis Launch. After completing Thesis Launch, students reported fewer barriers. Nine future barriers were discussed after the intervention, which was down from 17 intervention that were alluded to prior to their participation in Thesis Launch. Scout shared, “I am glad I went through the program. [Thesis Launch] has done a good job at easing some of that worry and getting me started early on the thesis process.” Tico saw internal barriers as a concern for the future, but she felt equipped to tackle them, “The only barriers I have now are simply my own brain and my ability to focus on the project for the next year. Though it will be difficult, I think I can do it!”

Of note, the most common barrier of time remained the same. Looking to the future, participants expressed concern about finding time during the semester to continue thesis work. Marge said, “Trying to balance doing a thesis and working with professors

with school and job is the biggest barrier.” Hailey also had concerns about time when she disclosed,

I think time is the only barrier to moving forward. I simply need to find the time in between all of my other commitments to further research and refine a topic that I can bring to a potential thesis director.

Robbie anticipated a barrier of fitting in thesis work during the semester and with her other commitments when she declared,

I'll probably actually do more of my work in the summer, just because it's easier to spend more time one-on-one with her and not get in the way of my classes. Also, because I'm going with medical school, I have to take the MCAT in the spring.

Participants perceived fewer barriers to thesis work after participating in Thesis Launch. Also, there was a change in the type of barriers reported. Future barriers were generally focused on time, and there were fewer reports of not having ideas for a thesis project, feeling overwhelmed, or concerns about approaching professors. Students no longer perceived these areas as barriers.

Building self-efficacy using various strategies. *Assertion 2: Utilizing Thesis Launch influenced student self-efficacy including (a) building self-efficacy to work with professors on the thesis and (b) providing strategies to begin thesis work.* Participants mentioned self-efficacy and the strategies they used in conversations during interviews, journal entries, and open-ended responses on the pre- and post-intervention surveys. The following theme-related components comprised the theme that led to Assertion 2: (a) levels of self-efficacy varied prior to participating in Thesis Launch; (b) students reported

higher self-efficacy after completing Thesis Launch; (c) self-efficacy to connect with professors was developed during Thesis Launch; (d) students used multiple strategies to begin thesis work; (e) small wins helped students make progress on thesis goals; and (f) structured reflection helped students see progress on thesis goals.

Levels of self-efficacy varied prior to participating in Thesis Launch. Students reported various levels of self-efficacy at the beginning of Thesis Launch. Some student comments pointed to lower self-efficacy. For example, some students claimed they “don’t know what I’m doing” in regards to completing the thesis. Scout said, “I’m not going to be able to finish something like this.” Charlie was also concerned and stated, “As a transfer [honors] student, I wasn’t confident that I was even ‘qualified’ to even work on my thesis.” Maggie also expressed lower self-efficacy when she maintained,

I have a basic idea for my thesis topic but have no clue how to change it into something thesis appropriate or ‘smart’ enough to approach a professor with. I also am nervous about asking professors or being rejected, and I am not confident in my ability to write a decent thesis that lives up to the expectations.

Even though some students had lower self-efficacy prior to participating in Thesis Launch, overall there were more statements that indicated higher levels of self-efficacy at the beginning. Students talked about being prepared for thesis work, feeling up to the challenge, and that they are capable of the work required. For example, Coco said, “I’m excited to work with experts on the topic, and I feel like it will be a great way to really challenge myself,” and Susie shared, “I knew I was going to do it. I got excited to do it, but I just didn’t know how to begin.”

A number of students indicated that they felt their thesis would have a larger effect on their academic discipline. This pointed to higher self-efficacy and showed these students felt they could complete a thesis, and they were optimistic that they could create work that would have an influence on their field of study. Neba shared, “[My thesis] will show myself [*sic*] that I have worked hard to create a thesis that speaks to what my values are and how I can help the world around me, primarily in the scientific field.” Similarly, Hans said,

It's my moment to actually make an impact on something that I am passionate about. I want [my thesis] to be the definition of what I want to do. I want it to bring attention to a matter that is important to me.

Other students mentioned that previous work prepared them for the thesis. In the words of Bandura (1982) these students had achieved mastery experiences in other areas that helped them develop self-efficacy for thesis work. For example, Jack claimed, “The thesis provides an opportunity to apply skills learned through college as well as learn about topics that are personally engaging.” Robbie reflected on past success in an honors freshman seminar that was notoriously difficult as a reason why she was now prepared for thesis work when she said,

I survived the [freshmen honors course] when it was not for me and so difficult, and I can also survive my honors thesis. My goal is not to survive my honors thesis but to push and challenge myself to study something outside my usual comfort zone for my thesis.

Keiki also felt that previous experiences prepared her for the thesis when she claimed,

This project offers a significant challenge, but I think it is one that all of my studies have finally led me to (and prepared me for). I hope that this process will reveal more about my future and career interests, offering me more insight on my capabilities and on the kind of work that I want to do in the future. I feel slightly daunted at this task, but I am also excited for a new challenge and for new growth!

Participants reported a range of self-efficacy prior to Thesis Launch. Although some students had lower self-efficacy at the beginning, most demonstrated a high level of self-efficacy even before engaging in the Thesis Launch program.

Students reported higher self-efficacy after completing Thesis Launch. Even though self-efficacy may have varied prior to Thesis Launch, almost all participants indicated higher self-efficacy after participating in Thesis Launch. Susie said, “I’m feeling much better, definitely, than before I started [Thesis Launch].” Hailey acknowledge that she still had worries, but saw a change to her thinking when she suggested, “I am a lot more confident now than I was before, even if I do still have some anxieties about it.” Tico expressed higher self-efficacy with joy and said, “Though it will be difficult, I think I can do it!” Charlie experienced performance accomplishments that built her self-efficacy as evidenced when she asserted,

I feel quite comfortable thanks to the template provided by Thesis Launch.

Otherwise, honestly, I would have NO idea what to even begin with. I am so thankful for this program as it has enabled me to confidently get started on my thesis. Thesis Launch has made this process a lot less scary!

Overall, participants of Thesis Launch expressed gains in self-efficacy during the program. Thesis Launch gave students an opportunity for performance accomplishments, which Bandura (1982) maintained could build self-efficacy. By achieving success during Thesis Launch, students built beliefs in themselves to complete an honors thesis.

Self-efficacy to connect with professors was developed during Thesis Launch.

In particular, participants experienced gains in self-efficacy to connect with professors. This was the most common area in which participants expressed gains in their self-efficacy. Susie shared, “The most useful part was how to search for, email, and meet with professors as I was very unsure how to approach a professor I did not know with my ideas.” Trudy gained self-efficacy in her interactions with professors as noted when she affirmed,

I have learned to not be afraid to talk to professors and other faculty! This was a big point of stress for me, but Thesis Launch encouraged me to be less afraid as these people are here to help me. The thesis process gave me the agency to take the topics I am passionate about and talk about them at length with professors and faculty who have experience in them as well.

Hailey saw improvement in her ability to connect with professors when she said,

I am a bit uncomfortable reaching out to professors because of my poor social skills. However, I am more comfortable than I was before because I have steps to follow and help provided to me. I am a lot more confident now than I was before, even if I do still have some anxieties about it.

As reported above, participants in Thesis Launch overwhelmingly found professors to work with on their thesis projects. This led to gains in self-efficacy to

connect with professors in the future. Students experienced performance accomplishments (Bandura, 1982) because they gained personal success in mastering skills for which they did not previously feel capable.

Students used multiple strategies to begin thesis work. Thesis Launch provided students with resources and strategies to begin thesis work. These resources have been discussed further in theme five. During the intervention timeframe, students used Thesis Launch strategies as well as strategies developed by themselves or recommended by others. Using strategies allowed students to build self-efficacy to tackle further thesis work. The most common strategies reported were learning how to connect with professors, exploring broad options for thesis ideas, and keeping open multiple options for a potential thesis director.

A strategy Jack planned to use was to prepare for meetings with professors when he said, “When I do meet with the professors I want, I will make sure to have a small PowerPoint prepared describing the goals of my project/what the direction of my project will be.” Scout wanted to meet with professors in-person after connecting over email and indicated,

I think for me the best way for me to branch out and meet professors would be to send something like the template email and arrange to meet them in person so I could get a better sense of the lab or maybe ask to shadow one of their lab days if possible.

Susie talked about her strategy to connect with professors as well as her plan to keep a broad range of professors in mind when she stated,

I wasn't sure how to approach [professors] in an email. So that part was really helpful, just in being able to contact professors. I took the [Thesis Launch] template and kind of made my own and then sent that out to a couple people. I think that was really helpful and just how to begin with connecting with professors. Where to look to find them, and to know that it didn't have to be people exactly with what you wanted to do. That's it good to have a broad range. I think that was definitely the most helpful.

Participants also considered a broad range of potential thesis topics as a strategy to help them get started. Charlie said, "If one idea doesn't work, I have the other one. If neither go to plan, I am open to ideas from faculty." Susie wanted to be nimble with her ideas and noted, "I will pivot if things don't go according to plan by always having alternative steps to take." Brutus also planned to be flexible while keeping his overarching goal of making an impact when he maintained, "If things don't go according to plan, then I will figure out a different topic or adjust the scope so that I can capture something that will be substantial and can be beneficial to society."

Multiple strategies were utilized by participants to begin thesis work. Thesis Launch provided several options for students, and each participant was able to focus on the strategies that worked better for him or her.

Small wins helped students make progress on thesis goals. Thesis Launch was designed to provide small steps that students could take to begin thesis work. In particular, students with lower reported self-efficacy more likely to experience difficulty when presented with a large, complex task like beginning the thesis. Weick's (1984) concept of small wins recommended breaking the large task into smaller components that

were more manageable and led to completion. By experiencing small wins, students felt encouraged to complete further thesis work.

Nellie appreciated having tasks broken down as she noted, “I liked how [Thesis Launch] broke down the process in steps. What helped me the most was how manageable each week was.” Thesis Launch helped Tico learn to manage future projects when she claimed, “I liked the weekly format because it was gradual. I have learned how to break down a project into pieces, setting small deadlines for myself in order to get my work done on time.” By experiencing one small win at a time, Brutus made progress as he suggested,

[Thesis Launch] was very structured with detailed small steps that allowed me to start my thesis and propel me to finish it, along with giving me guidance on the next steps. I liked the resources and the structure of it being week by week. The most helpful thing most definitely was the detailed mini steps each week, which allowed me to digest it step-by-step and not feel overwhelmed.

The structure of Thesis Launched helped students make step-by-step progress. By making progress to begin thesis work via small wins, students were more likely to persist and complete a larger project like the thesis. The step-by-step structure of Thesis Launch also helped students plan for future thesis work.

Structured reflection helped students see progress on thesis goals. As part of Thesis Launch, participants were asked to respond to prompts in a weekly journal. This provided an opportunity for structured reflection. Recall, Schön’s (1983) concept of the reflective practitioner recommended reflection as a tool for problem-solving and skill-building. Students enjoyed taking time to reflect on progress and reported that the

reflection encouraged further action and allowed students to see the progress they were making on the thesis. Regular journaling helped Hailey move forward as noted when she wrote, “The constant reminders and weekly journals held me accountable and encouraged me to do all of the weekly tasks.” Weekly reflection helped Susie see what she had accomplished or what she still needed to do as noted in her journal entry,

Writing my ideas down was really good. I would do all the work during the week and then be like I don't know what I did. That was really helpful to have the journals and be like, this is what I did this week. Or I'd be like, oh wow, I didn't spend anytime on it this week, and kind of just have that mental note.

Reflection aided Jack in planning future action as indicated in this comment,

I thought [the journal] was good. I thought it helped me personally see the overall progression of where I started and where I am now for Thesis Launch. By working in Thesis Launch it helped show me what steps I need to take afterwards and journaling did help. As I was typing down the journals I was like, ‘Oh yeah, I have to do this as well or this step as well,’ so by doing the journals it helped me get a better understanding of steps I still need to take.

Tico did not write much in the early weeks of Thesis Launch, but she found herself writing more as the program progressed and she offered this observation,

I liked going on at the end of the week and writing out what I thought about.

Obviously I didn't write as much as it started, but as it went along I was able to write more, and became more comfortable with writing more.

By taking time for reflection, participants were able to see the progress made on thesis work. In turn, this helped students build self-efficacy by recognizing performance accomplishments, which then encouraged students to tackle further thesis work.

Using technology to learn and support navigation of thesis components.

Assertion 3: Students preferred an online, technology-based program as a means of learning and supporting their efforts. Participants discussed the modality of the intervention in interviews and survey responses. The following theme-related components comprised the theme that led to Assertion 3: (a) students appreciated the use of technology to present Thesis Launch materials and as reminders and (b) students preferred communication via text messages in Thesis Launch.

Students appreciated the use of technology to present Thesis Launch materials and as reminders. Thesis Launch was designed as a primarily web and text message based intervention. One reason of using this modality was that it provided a scalable option for the size of the honors college. Participants appreciated that Thesis Launch was available via web and text message. This allowed students to access materials anytime 24/7, and it was a format that was familiar and convenient for students.

Students reported liking the format, and in particular they found the multiple types of reminders helpful. Bella said, “I loved the text reminders, and the online material. It definitely helped me get started on the process, and made things feel less overwhelming.” Hailey felt several of the components were useful and referenced the text messages and email reminders, the online reflection journal, and the tasks on the Thesis Launch website when she noted, “I enjoyed the structure that the program provided for me. The constant reminders and weekly journals held me accountable and encouraged me

to do all of the weekly tasks.” Charlie also appreciated a technology-based format and claimed,

I loved that Thesis Launch was built to support and fit the busy lifestyle of students. The text messages were so helpful and served as a great reminder. The website has so many resources that I can’t wait to continue using it! I loved the website and text messages, it is a modern approach that makes it easy to follow along in between classes and work and commuting to school so that I can get started on my thesis sooner!

Overall, there were only positive comments about the use of technology in Thesis Launch. Some students had suggestions of how to improve the tools and format, but no one suggested moving away from technology to implement Thesis Launch.

Students preferred communication via text messages in Thesis Launch. Many students specifically mentioned the text messages in their responses. The text messages were the most commonly used component of Thesis Launch. Students had busy schedules, and receiving reminders via text message was helpful for many. Scout said, “The texts were helpful, because I’d get the texts and I was like, ‘oh yeah.’ But it’s easy to let things slip very quickly in college.” Tico also mentioned her busy schedule and stated,

The texts were really good help because they just kinda reminded me because I have a very busy schedule. I would completely forget about it and then I’d get a text, and then I knew I had to at least think about it that week. I had to do something.

Bella spent more time on thesis tasks due to the text messages as she indicated when she affirmed,

One thing that I found very helpful was the text reminders. I think it was easy to get overwhelmed and just not wanna think about it, but the text reminders encouraged me to spend more time than I would have without the reminders.

Although the text reminders were popular with most participants, not everyone liked them. Marge shared that she preferred receiving email reminders. She also scheduled thesis work on her own using the website and her personal planner. She said,

I didn't super use the text messages. Those were kind of bad timing. I got them and it was usually when I was doing something. And then I was just like, I just dismissed it and I didn't really think about test messages. So usually, I would have it in my planner or something, and I'd be like, 'Oh, I need to do that.' The emails were helpful to me because I feel like my email is there and then I look at it more frequently than I go and look back at my texts. So the emails were definitely better.

Students overwhelmingly preferred communication via text message. This showed that text reminders were a good choice for most students. It was also helpful that Thesis Launch had several options to engage students in case the text messages were not seen or preferred that week.

Customizing individual timelines for thesis work. *Assertion 4: Students began thesis work early, and students' thesis timelines changed based on work completed during Thesis Launch.* Thesis Launch was pitched to participants as a tool to help students begin thesis work early. Participants all had some interest in beginning work early, but their timelines varied. Students talked about their individual timelines in interviews, journals, and survey responses. The following theme-related components

comprised the theme that led to Assertion 4: (a) some students had completed thesis-related work prior to Thesis Launch and (b) student thesis timelines were individualized and varied depending on student progress.

Some students had completed thesis-related work prior to Thesis Launch.

Participants in Thesis Launch were targeted specifically during their junior year with the goal of helping students begin thesis work early. Nevertheless, students began Thesis Launch with various levels of prior work. Based on this previous work, students engaged with Thesis Launch in different ways. The most common work completed prior to Thesis Launch was thinking about thesis ideas, meeting with an honors advisor, and completing a thesis workshop.

Jack had been thinking about thesis ideas as noted when he said, “I would say I wasn’t 100% certain as to what the topic would be, but I had several topics or paths I was already thinking about.” Trudy had a specific field of study in mind prior to Thesis Launch as she noted, “I narrowed it down to I wanted to do something with health and especially maternal health.” Robbie had met with her honors advisor. She claimed, “I did actually meet with my honors advisor, maybe about a week before I heard about Thesis Launch and started talking about what I should be doing.” Hailey completed a thesis workshop prior to participating in Thesis Launch and indicated, “I had gone to one of the workshops in the previous semester, but otherwise I was still pretty lost about what I wanted to do, what professors to approach.”

Students began Thesis Launch with various levels of previous knowledge. The expectation was that students would then customize their experiences within Thesis Launch based on where they were at in the thesis process.

Student thesis timelines were individualized and varied depending on student progress. Participation in Thesis Launch allowed some students to complete their prospectus and begin the thesis a semester early. As other students began the initial preparation work to begin a thesis, they realized they would need additional time to be ready for thesis work. Completing preparatory work early gave participants the flexibility to adapt their personal thesis timeline to their own needs.

Several students talked about how they adapted the Thesis Launch program to make it their own. Jack did not plan to start his thesis until senior year, but he was still able to make the program meet his needs, “Even though I am not doing the later steps of Thesis Launch ‘til next semester (e.g., directly speaking with my professors), having the steps of how to and what to do afterwards was very helpful.” Hailey stretched out Thesis Launch tasks because she wanted to spend more time on formulating topic ideas as noted when she said, “I stuck to it week by week, but towards the end it was iffy, because I still don't have a prospectus yet, and I'm still narrowing down that thesis topic, so I went back to the brainstorm multiple times.” Tico used Thesis Launch as a general guide when she indicated,

I didn't stick with [Thesis Launch] very rigidly, I didn't do every single thing involved. But having the general outline of things that I should be doing around that time was very helpful. I really appreciated that it was something that I could do on my own time that was not mandatory. I very much appreciated that.

By participating in Thesis Launch, Scout realized that she may need additional time to complete a thesis at the level she wants. She said,

It's almost kind of like the thesis for me will span an extra semester to a year, because to get ready for it, to do it well, and not feel like I'm being thrown into something I don't know, I'll need that extra time.

Scout elaborated further on her thesis timeline and how beginning work early helped her feel better about the process when she stated,

Although I plan to start [my thesis] during my senior year like most people, I feel that advantage I have gained through this is that I really do feel like I have 'started' it early since I feel like I have gotten myself the knowledge and resources to begin thinking about this earlier and feel more in control of it. Thesis Launch gave me the idea to work on it earlier, to be able to work on it without having to have started officially, which in some ways is kind of relieving.

By beginning thesis work early, Coco had options for when she completed her honors thesis as she indicated,

I was stressing. I was like, 'Oh, no. This is gonna take so much time.' But then now I'm like, 'Oh, it's actually not that bad.' And I may start my thesis in spring or I may wait until fall. I have options for my timeline now.

Students participated in Thesis Launch with the goal to begin the thesis early.

Although not all students submitted a prospectus, all were able to make progress on thesis work and customize a timeline that made sense with respect to their goals and schedules.

Utilizing resources. *Assertion 5: Participants utilized and valued resources provided through Thesis Launch.* Students discussed Thesis Launch resources and how the resources helped them begin thesis work. These topics were mentioned in interviews, journal entries, and survey responses. The following theme-related components

comprised the theme that led to Assertion 5: (a) students utilized many of the resources provided by Thesis Launch; (b) Thesis Launch resources encouraged students to take action on thesis-related tasks; and (c) Thesis Launch resources provided a model of how to begin thesis work.

Students utilized many of the resources provided by Thesis Launch. A variety of resources were available through Thesis Launch to aid students in completing weekly thesis-related tasks. Some highlighted resources were a professor contact template, an elevator pitch exercise, and the thesis library. Several students used all of the resources whereas others chose to only use the ones with which they needed help. For example, Bella said,

I feel like I've used most of [Thesis Launch resources]. I used the brainstorming worksheet. That was real cool. I used the email template, introduction template and then also used the reference of looking up other people's thesis. That one wasn't as helpful to me. And then I used looking up professors, that website link and that was really helpful.

Hailey found resources on how to contact professors especially helpful when she affirmed,

[Thesis Launch] provided me a lot of the resources that I didn't have before.

Before, I had no idea how to even begin an email to a professor I have never met, but the template helped me get an idea of where to start.

Trudy already had a thesis idea, but still found it helpful to follow along with the Thesis Launch brainstorming exercise as she noted,

I used the actual resources on [Thesis Launch] so there was a couple of documents throughout that helped me, like the elevator pitch one I mentioned, the brainstorming one was helpful even though I already had kind of a broad idea of what I wanted to do. It was nice to kind of narrow it down and even come up with other plans just in case this one didn't work out.

Participants felt the resources provided in Thesis Launch provided value and helped them accomplish early thesis work. Students were able to focus on the resources that assisted in areas in which they needed the most help.

Thesis Launch resources encouraged students to take action on thesis-related tasks. Students liked having concrete steps with supporting resources. The structure encouraged participants to take action to achieve that week's goals. Participants described Thesis Launch resources as a gentle reminder or a push to act. Tico said, "Being like, oh this is the stuff I should be thinking about this week. That kind of thing. I liked having a gentle reminder." Thesis Launch resources propelled Scout to begin thesis work, and she compared Thesis Launch to jumping into a cold pool, "Having started and using Thesis Launch to force myself to get started is kind of like jumping into a cold pool. It sucks, but once you're in, it's like, 'okay, well, I guess I'll keep swimming.'" Robbie saw herself beginning her thesis earlier than her peers due to participation in Thesis Launch,

I think the little extra push of Thesis Launch pushing me to start early was super helpful. Working through Thesis Launch, I was like, 'Okay, yeah, let's just do this.' And it pushed me to just go for it earlier than it seems like most of my classmates have been doing.

Thesis Launch resources provided structure to help students organize thesis work. That, along with weekly goals and reminders, kept the thesis front-and-center in students' minds. The structure and reminders of Thesis Launch encouraged students to take action on thesis work.

Thesis Launch resources provided a model of how to begin thesis work.

Participants saw Thesis Launch as a model or standard of how to begin thesis work. It set an expectation for work, and helped students understand how to structure thesis work moving forward. It normalized the process and let students see that they would be supported throughout their thesis work. Tico said, "I definitely am a little bit more relaxed about it because I'm like, okay I literally just have to cut it down into bite sized pieces. And I'm like, 'Oh! Okay, so that's what people typically do.'" Bella felt supported by following along with Thesis Launch resources when she maintained,

I might still feel a little bit overwhelmed with not quite knowing how to go about it. But I definitely, I think I feel just a lot more reassured having the Thesis Launch program sort of like as an outline for how to go about with the next steps moving forward and having the resources and people that I can contact. Yeah, I definitely feel more supported and I know more where I stand, if that makes sense. Like how to move forward.

Jack developed a plan for future thesis work based on his experiences with Thesis Launch resources when he said,

I like the breakdown of assignments through Thesis Launch. It was helpful to have a step-by-step guide on how to approach the start of the thesis project. It has

allowed me to have a solid plan for beginning my thesis project and has served as a model for the amount of work required by the project.

Participants in Thesis Launch learned about the thesis process, various resources, and they also learned strategies of how to structure work on a large-scale, long-term project. Thesis Launch provided structure and support. It also served as a model of best practices for future thesis work.

Summary

Because this was a mixed methods action research study, both quantitative and qualitative data were collected simultaneously using a concurrent multimethod design. Quantitative data sources and qualitative sources were analyzed separately and then reviewed.

Quantitative data from the pre- and post-intervention survey was analyzed to examine (a) self-efficacy and perceived barriers to begin the honors thesis and (b) small wins and scaling via technology. Participants showed a significant change in self-efficacy with respect to collaborating with professors on honors thesis work. There was also a substantial change in student perception of barriers. Participant perception of barriers decreased after participation in Thesis Launch. Students also reported that Thesis Launch helped them make progress on beginning their theses. Both the survey and journal responses indicated participants frequently used text message reminders and the Thesis Launch website. Additionally, a higher percentage of Thesis Launch participants began the thesis a semester early. Over 25% of participants submitted their prospectus a semester early compared to just under 9% of the total junior class.

Qualitative analysis of interviews, journal entries, and survey responses led to five assertions. First, participants overcame perceived barriers and reported fewer barriers after experiencing successes during Thesis Launch. Second, utilizing Thesis Launch influenced student self-efficacy including building self-efficacy to work with professors on the thesis and providing strategies to begin thesis work. Third, students preferred an online, technology-based program as a means of learning and supporting their efforts. Fourth, students began thesis work early, and students' thesis timelines changed based on work completed during Thesis Launch. Fifth, participants utilized and valued resources provided through Thesis Launch. Quantitative and qualitative results were brought together and discussed as a whole in the next chapter.

CHAPTER 5

DISCUSSION

The purpose of Thesis Launch is to help students begin the honors thesis process early. Data shows that students who begin their thesis early complete the thesis at a rate of 97%. Thesis Launch is designed to help more students begin thesis work early to ensure successful completion in the future. The intervention builds on lessons learned from Bandura (1977) on self-efficacy, Weick (1984) on small wins, and Schön (1983) on reflective practices. Further, multiple cycles of action research refine the problem of practice and improve the research instruments. In this chapter, I combine quantitative and qualitative results, review them together, and look for complementarity between data sources. Next, I provide a discussion of findings organized by how they relate to my research questions. Following this discussion, limitations, implications for practice, implications for future research, reflection, and final conclusions are shared.

Complementarity and Integration of Quantitative and Qualitative Data

This study is a mixed methods action research study, and both quantitative and qualitative data are examined for complementarity. Complementarity (Greene, 2007) means examining the data to determine whether quantitative and qualitative results point to the same conclusions. Ivankova (2015) recommends systematically comparing both types of findings to find support, enhancement, or illustration of one method applied to the other. In chapter 4, I first review quantitative results from the surveys, journals, and prospectus submissions for trends, and then I group qualitative results from interviews, journal entries, and open-ended survey responses into themes and assertions. In this

section, I will discuss how the narrative data complements the quantitative data and enriches the understanding of the results.

Survey results show participants' perceptions of barriers change following participation in Thesis Launch. For example, barrier items that saw the largest decline are: (a) I am unsure how to approach professors about the honors thesis; (b) I feel overwhelmed with the honors thesis process; and (c) I don't know where to begin on the honors thesis process. This result is supported by qualitative data. Students' narratives indicate more barriers before participating in the intervention and fewer barriers after completing Thesis Launch. Consistent with the quantitative data, qualitative data show students gained skills to approach professors about the honors thesis with many students identifying thesis directors. In the interviews and journals, students expressed that Thesis Launch provides a model and structure so students know what steps to take to begin thesis work without being overwhelmed.

Survey results also show significant change in student self-efficacy toward working with professors on the honors thesis. This is clarified by the qualitative data. In interviews, journal entries, and open-ended survey responses, students report increased self-efficacy to connect with professors and discuss how connecting with professors influenced their progress. In their interviews, students remark about how Thesis Launch helps them build confidence to talk to professors by providing steps and strategies to follow when reaching out and meeting with professors. Participants are able to have mastery experiences that build self-efficacy and encourage further conversations and collaborations with professors.

The survey results show what resources students use during Thesis Launch to make progress and how frequently they use these resources. These include text message reminders and the Thesis Launch website with included resources. Notably, qualitative responses indicate the text message reminders support students' efforts by keeping them accountable to weekly tasks while fitting thesis work into their busy lives. The qualitative responses illustrate in depth how students use Thesis Launch resources such as the professor contact template, an elevator pitch exercise, and the thesis library. These are available through the Thesis Launch website, and students report using these materials to accomplish thesis work early.

Finally, prospectus submission data shows how many students officially began their thesis early. Qualitative narratives provide more context to support the numerical data. Even though not all students turn in a prospectus, participants share in interviews and journals that work done through Thesis Launch is a catalyst to begin thesis work early. For example, several students became more nuanced in their understanding of the preparatory research needed to successfully begin a thesis, and these students customized their thesis timeline to allow more time for preparatory work before officially submitting a prospectus. This type of action is an early form of thesis work that should allow the student to ultimately have a stronger final thesis project.

Discussion of Findings

In this section, I present a discussion of findings organized by the research questions guiding this study. Connections to related theoretical perspectives, literature, or previous cycles of action research are used to understand the findings.

RQ1: What barriers did students describe when beginning the honors thesis process, and how did the perception of those barriers change over time? Previous cycles of research show that students perceive many barriers that prevent them from beginning the honors thesis process. The dissertation study provides additional data to support this contention. Participants indicate a high level of agreement with respect to barrier statements in the pre-intervention survey, and they discuss a wide variety of pre-intervention barriers in their interviews and journals. Notably, student perceptions of barriers change over time. In their post-intervention reports, students acknowledge fewer barriers to continuing thesis work, and participants disagree with barrier statements on the post-intervention survey. One barrier in particular, working with faculty members, declines over the course of the intervention. One way to understand this decline is that students' self-efficacy increases (Bandura, 1977; 1982), which is true for the quantitative data. Bandura's work on self-efficacy suggests that increasing self-efficacy, in this case with respect to working with faculty members, supports students in their efforts.

The barrier that remains constant is time. Students have many commitments that compete for their time. Adding thesis work on top of an academic schedule and other life commitments is a concern for students, and time is a barrier that Thesis Launch could not remove. Instead, what I aim to do with Thesis Launch is remove some of the unknowns and uncertainty surrounding thesis work. Participants report feeling overwhelmed or unsure about how to begin thesis work. By providing structure, students can focus their efforts on removing other barriers such how to approach professors and identifying research topics. Once students begin to experience thesis-related successes, such as small

wins (Weick, 1984), and increases in self-efficacy (Bandura, 1977; 1982) they are able to overcome previous, perceived barriers.

RQ2: How and to what extent did the Thesis Launch program affect student self-efficacy and completion of tasks connected to beginning the honors thesis? The pre- and post-intervention surveys show overall self-efficacy to begin and complete a thesis are high. Students know an honors thesis is an expectation prior to applying to the honors college, so it follows that students develop some level of self-efficacy to complete a thesis. When reviewing qualitative responses, participants show various levels of self-efficacy prior to participation in Thesis Launch, and participants discuss feeling an increase in self-efficacy after the end of the program. Specifically, students show the largest change in self-efficacy to collaborate with professors. Results from a repeated measures ANOVA on this construct show a significant change in student self-efficacy to work with professors. Students must be able to approach and work with professors to conduct their thesis work. Results indicate that Thesis Launch helps students with this goal.

Bandura (1977; 1982) shares four principal sources of information that influence students as they build self-efficacy based on performance accomplishments, which is the most powerful of efficacy information. Performance accomplishments occur when students have an opportunity to achieve personal success as they engage in experience that allow them to master a task or skill. Thus, successful experiences such as actually working with a professor or mastering strategies for working with a professor increase students' self-efficacy for this task, which may account for students' self-efficacy change in working with faculty members.

Moreover, using Weick's (1984) concept of small wins to make progress on thesis work and build self-efficacy is another way to account for changes in self-efficacy. All survey items related to working with faculty members have a positive mean response. Students feel Thesis Launch provides an opportunity to complete smaller tasks and make progress on thesis work. Thesis Launch provides an opportunity for students to experience performance accomplishments via small wins. Students gain personal success in mastering skills for which they did not previously feel capable, which Bandura (1982) asserts builds self-efficacy.

Finally, reflection also aids students in building self-efficacy. Schön (1983) presents reflection as a tool to help individuals to become reflective practitioners, which allows them to think more carefully about their skills, routines, and procedures. Reflective practitioners regularly consider and ponder about their efforts to build awareness for problem-solving and skill-building. Asking students to engage in weekly reflections allows them to take time to see their performance accomplishments and build self-efficacy.

RQ3: How and to what extent did technology help with scaling thesis preparation to a large audience? Cycle 2 results show student preference for online resources and text message reminders. This led me to design Thesis Launch as a technology-based intervention. Working in a large college with over 7,000 students, I am mindful of building a program that can be sustainable and scalable to all of our students.

In this study, all participants respond favorably to an intervention delivered primarily through web-based resources with text message reminders. Students prefer this format as compared to an in-person option. In all, 86% of students' journal entries

include using the text message reminders. Thus, utilizing text messages appears to be a powerful tool to reach students. Text messages are a way to nudge students to take an action and promote change (Thaler & Sunstein, 2009). Advisors and administrators need to be mindful of the 21st century college student and utilize modalities that work with their lifestyle (Hanson, et al., 2010; Junco & Mastrodicasa, 2007). Thoughtful consideration of student needs such as their positive attitudes with respect to using technology may lead to higher participation in future interventions.

RQ4: How and to what extent did students who participate in Thesis Launch begin early on their honors thesis work? College data shows that submitting a prospectus early is a strong indicator that a student will complete the honors thesis. Remarkably, 97% of students who submit a prospectus early complete an honors thesis, so this intervention is designed to help more students begin the thesis process early. Results from this study show Thesis Launch participants submit a prospectus at a higher rate than the rest of the junior class, approximately 25% versus 9% respectively. This suggests that a thoughtful, targeted intervention can help students begin the thesis early.

Originally, I planned only to show prospectus submission rates to demonstrate “to what extent” students begin early thesis work. Although this is an important indicator that students are beginning thesis work, it may be somewhat deceptive and ultimately underestimate the numbers of students who begin thesis work early. Naturally, some students submit a prospectus early after participating in Thesis Launch. Nevertheless, as other students begin thesis work, they realize they will need additional time to be more fully prepared to begin the thesis. This could involve additional research or activities that make them feel better prepared for the thesis effort, or it could mean spending more time

building relationships with professors with whom students want to work. Notably, completing preparatory work early gives students the flexibility to adjust the thesis timeline to meet their individual needs even if they are not meeting the deadline for early submission of the prospectus.

Limitations

Several limitations should be considered when reviewing this study. Overall, the goal of action research is not to achieve generalizability. Action research is intended to deeply embed in a specific context with an intervention designed precisely for this setting. It is not intended to be generalizable to a wider setting. Nevertheless, others may be interested in the transferability of outcomes from this study. It is imperative that the reader carefully determines what could apply based on their own context (Mertler, 2014). It is possible that there may be transferability of elements or aspects of this study to similar settings.

Due to the nature of action research, this study was not conducted in a controlled environment so history is a limitation. History refers to events that occur during the same time period as the intervention which could cause a change in the dependent variable (Smith & Glass, 1987). Students participated in Thesis Launch over six weeks, and they also encounter other factors that may have contributed to their thesis progress. Variability in the setting is expected with action research. As in most action research studies, I do not intend for the reader to infer that Thesis Launch was the sole cause of results. Rather, the results are part of a larger picture of the student experience during the timeframe of Thesis Launch.

Mortality, or attrition, is another limitation. In the dissertation study, 31 students indicate interest in participating in Thesis Launch and begin the study. Ultimately, 13 students complete the study. I made every effort to retain participants in the study. For example, I sent reminders using various formats to encourage students to complete their participation in Thesis Launch and explain the benefits students could expect for their participation. A research incentive was also offered to participants. Although there are enough participants for meaningful results, having more participants would have strengthened the study.

Another limitation to consider is the Hawthorne effect. The Hawthorne effect occurs when participants feel they are getting special treatment, so they act differently (Smith & Glass, 1987). In action research, the researcher is embedded in the context of the study, and I am the one administering the intervention and collecting data. To mitigate this risk, I collect data from multiple sources. For the online sessions, the survey, and the journal, participants are anonymous and create a unique identifier. It is possible that the Hawthorne effect could occur during in-person sessions or during the interviews when students interact with me as the researcher. Before starting each interview, I remind the participants that their information is anonymous to encourage authenticity.

A final limitation is the length of the study. This study is part of a doctoral dissertation which places limits on the study due to the program timeline. Due to this, I am only able to track student progress to begin an honors thesis. For future study, it would be useful to follow participants longer to track whether students complete an honors thesis and ultimately graduate from the college.

Implications for Practice

Honors advisors want to help students who are struggling to begin the honors thesis process. The numbers are clear; when students are connected to professors and begin the honors thesis early, they are successful. Using creative solutions, such as Thesis Launch, provides tools, strategies, and resources that advisors can share with students. It also provides students with another format to assist with early thesis work beyond standard advising meetings. There are several implications for practice that I will highlight including (a) focusing on helping students connect with professors; (b) providing an opportunity for small wins via structured tasks; and (c) utilizing technology to provide students ubiquitous access to the resources.

First, advisors can focus on helping students connect with professors. Results from this study show students see the largest gains when they are able to connect with professors. Students feel unprepared to connect with professors prior to beginning thesis work. Through Thesis Launch or other interactions, advisors could spend more time and share more resources to help students connect with professors. Advisors can provide guidance on how to carry out research on professors to find a “good match” for their interests, tips for approaching professors, and advice on how students can present themselves at early meetings with professors. These are areas in which advisors have experience and the results from this study suggest students would benefit from more time spent on these important topics.

Second, providing an opportunity for students to experience small wins via structured tasks could help students build self-efficacy and promote taking action on thesis work. The design of Thesis Launch allows students to complete a set of small tasks

each week that provide affordances for students to accomplish small wins. Again, whether through Thesis Launch or other interactions, advisors can help students to structure next steps in a similar manner. For example, at the end of each advising appointment, advisors can help students put together a list of key tasks to help the student structure next steps for thesis progress. In the research study, Scout discussed the value of having structure and next steps when she said,

I found that having just the online format really delineate the order that someone might, in general, perceive that starting the thesis was helpful. I think just having it done step-by-step instead of just being this kind of large, big project I had to start. The checklist format of it was helpful.

Third, it is important to utilize technology when working with today's students. Technology can be a win-win to allow offices serving large numbers of students to scale-up their practices and to offer students additional support in a format they prefer. In-person advising appointments are important, but only so much can be covered in a 30-minute meeting. By using tools such as web-based interventions and text messaging, advisors can extend interactions beyond the 30-minute meeting. Thesis Launch offers a tool to bring targeted thesis preparation messages to students.

Implications for Future Research

I see several areas for future research. First, it is vital for students to collaborate with professors and research clearly indicates students need support to achieve this in a timely manner. This is a topic that advisors quickly learn when working with students, and it is interesting to see this theme develop over the course of the study. Collaborating with professors is the area in which students feel they need the most help and ultimately

see the most change in self-efficacy. Thesis Launch is designed to help students with a variety of tasks to begin thesis work. For future study, I would like to focus specifically on an intervention to help students connect with professors. Although Thesis Launch is targeted to juniors, this future cycle of research could capitalize on targeting students earlier in their studies to help them become comfortable in collaborating with professors.

I would also like to utilize technology more effectively to improve Thesis Launch. I envision Thesis Launch as a mobile application that is asynchronous. For the research study, all participants begin Thesis Launch at the same time, and all students complete the program over the same 6-week timeframe. In a future cycle, students could sign up to begin the program whenever they are ready. The mobile application would take account of when students check off tasks, and it would then move students to the next module. That means that instead of each section taking a week, some students may work through the first section in a day and others may take a month. In other words, it would be truly customizable, and students could move through the program at their own pace. For the 21st century student, technology changes quickly, so practitioners must be willing to continually change and adapt our approaches as technology preferences change.

Reflection

Just as I asked Thesis Launch participants to reflect as a regular practice, I also engaged in reflection throughout the dissertation process. One of the most powerful parts of my doctoral journey was the time spent deeply thinking and reflecting on my practice and my study. Becoming a reflective practitioner allows me to be a better scholar and leader moving forward. Reflecting on my progress led me see several personal lessons learned that I will carry with me after this doctoral journey.

First, I am a better consumer of research by participating in the Ed.D. program. When I would previously read journal articles, I would gloss over the data analysis section because I did not fully understand what I was reading. I have developed a strong understanding of how to read research, and I have developed a critical eye when reviewing data and assertions. This is a lesson that I will carry in my professional life as well as my personal life.

Second, I appreciate mixed methods research. Administrators often ask to see numbers before making a decision. Although quantitative data can be useful, I learned to understand the added power of having qualitative data to enrich, support, and explain the numbers. Rich descriptions from participants put the numbers into context and paint a clearer picture of what the numbers may mean. Qualitative narratives in this study help me understand the results and student experience so much better. Moving forward, I anticipate collecting qualitative data with quantitative data as a best practice in our office.

Third, I understand the value of action research. Coming into this program, action research was a new concept to me. I was intrigued but not certain it would be the right fit for my research. My thinking has dramatically changed. By nature, I am a doer. I like to take action and try things out. Action research allows practitioners to try out ideas using multiple cycles of incremental change. It allows me to try something out, see what I can learn from this cycle, and adjust for the next round of research. I believe that the iterative nature of action research helped me to develop an intervention that is stronger than it would have been using another less flexible method. Implementing action research is now a tool I have developed well and that I will use in my practice moving forward.

Conclusion

Completing an undergraduate honors thesis is a large venture. Nationwide, it is uncommon for undergraduate students to undertake a long-term, large-scale project like a thesis, yet it is a requirement for all students to graduate from our honors college. As an advising administrator, I see the transformative affect that completing a thesis has on students. It truly sets students up for success after graduation by building self-efficacy to go confidently into the working world. Completing a thesis prepares students for graduate or professional programs, or it enables them to excel in the workplace by leading complex projects. Even though students may have beliefs in their overall abilities to complete an honors thesis, many still struggle in the initial stages of beginning the work and setting up the project. This is an area with little research, and it is an area that advisors are poised to influence student success.

A key conclusion from this study is that many students need help connecting with professors. Students must have professor support before they can begin an honors thesis, yet some students feel lost or unsure of themselves when told they need to connect with professors. Advisors have an opportunity to help students explore professors' research interests, prepare relevant background research, and plan for their initial interactions with faculty. Collaborating with professors is an area in which students show lower self-efficacy, and with targeted intervention, advisors can help students build their confidence. Another conclusion is that an earlier intervention may be useful to help students build those connections to faculty members before the thesis work even begins. Advisors can do this by sharing a thesis initiation model with students and helping them build structure into what may seem like a loose, overwhelming task. When students are able to

experience performance accomplishments via small wins, and build self-efficacy they are more likely to continue making progress and can envision themselves completing the task.

Prior to this study, our college had several processes in place to aid students in the thesis preparatory process. This process was not broken, but I knew it could be improved. Our college continually strives to set the standard for honors education, and I created Thesis Launch in the spirit of continual improvement. My hope is that this research inspires our college and others to keep improving our processes and finding new ways to help students tackle the most transformative challenge of their undergraduate work, the honors thesis.

REREFERNCES

- Amabile, T. M. & Kramer, S. F. (2011). *The progress principle: Using small wins to ignite joy, engagement, and creativity at work*. Boston, MA: Harvard Business Review Press.
- Arizona State University. (2019). *Enrollment trends by campus of major*. Retrieved from https://public.tableau.com/profile/ia.reporting#!/vizhome/Enrollment_76/EnrollmentbyCampus
- Arizona State University. (2016). *ASU: Facts at a Glance Fall 2016*. Unpublished internal document, Arizona State University.
- Babrow, A. S. (2001). Uncertainty, value, communication, and problematic integration, *Journal of Communication*, 51(3), 553-573.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. <http://dx.doi.org/10.1037/0033-295x.84.2.191>
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147. doi:<http://dx.doi.org.ezproxy1.lib.asu.edu/10.1037/0003-066X.37.2.122>
- Bandura, A. (2005). The evolution of social cognitive theory. In K. G. Smith & M. A. Hitt (Eds.) *Great minds in management* (pp. 9-35). New York, NY: Oxford University Press.
- Bandura, A. (2006). Chapter Fourteen: Guide for constructing self-efficacy scales. In *Self-efficacy beliefs of adolescents* (pp. 307-337). Charlotte, NC: Information Age Publishing.
- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67(3), 1206-1223.
- Barrett, The Honors College. (2011). *Barrett, The Honors College Fact Book 2010-2011*. Unpublished internal document, Arizona State University.
- Barrett, The Honors College. (2012). *Barrett, The Honors College Fact Book 2011-2012*. Unpublished internal document, Arizona State University.
- Barrett, The Honors College. (2017). *Barrett, The Honors College Fact Book 2016-2017*. Unpublished internal document, Arizona State University.

- Bereiter, C., & Scardamalia, M. (1993). Chapter Four: Expertise as process. In *Surpassing ourselves: An inquiry into the nature and implications of expertise* (pp. 77-120). Chicago, IL: Open Court.
- Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal interaction. *Human Communication Research, 1*, 99-112. doi:10.1111/j.1468-2958.1975.tb00258.x
- Bosco, F. A., Herman, A., Kulraj, S., Field, J. G., & Pierce, C. A., (2015). Correlational effects size benchmarks. *Journal of Applied Psychology, 100*(2), 431-449. doi:10.1037/a0038047
- Buss, R. R. (2018). Using action research as a signature pedagogy to develop EdD students' inquiry as practice abilities, *Impacting Education, 2*(2018), 28-36.
- Carroll, L. J., & Rothe, J. P. (2010). Levels of reconstruction as complementarity in mixed methods research: a social theory-based conceptual framework for integrating qualitative and quantitative research. *International journal of environmental research and public health, 7*(9), 3478-88.
- Clark, C., Schwitzer, A., Paredes, T., & Grothaus, T. (2018). Honors college students' adjustment factors and academic success: Advising implications, *NACADA Journal, 38*(2), 20-30.
- Datta, S., Law, M., & Law, L. S. (2015, May). *Expanding the definition of "Honors"*. Plenary panel presented at the biannual meeting of Honors Education at Research Universities, Corvallis, OR.
- Dell'Olio, J. M. (1993). *Schon's cycle of reflection-in-action in the work of staff developers*. Available from ProQuest Dissertations & Theses Global. Retrieved from <http://login.ezproxy1.lib.asu.edu/login?url=http://search.proquest.com/docview/304053703?accountid=4485>
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*, 147-160.
- Drake, J. K., Jordan, P., & Miller, M. A. (2013). *Academic advising approaches: Strategies that teach students to make the most of college*. San Francisco, CA: Jossey-Bass.
- Edmondson, D. R., Edwards, Y. D., & Boyer, S. L. (2012). Likert scales: A marketing perspective. *International Journal of Business, Marketing, and Decision Sciences, 5*(2), 73-85.

- Endres, M. L., Camp, R. & Milner, M. (2015) Is ambiguity tolerance malleable? Experimental evidence with potential implications for future research. *Frontiers in Psychology*, 6(900), 1-7. doi: <http://dx.doi.org/10.3389/fpsyg.2015.00619>
- Flick, U. (2014). *An introduction to qualitative research* (5th ed.). Thousand Oaks, CA: Sage.
- Ford, L. A., Babrow, A. S., & Stohl, C. (1996). Social support and the management of uncertainty: An application of problematic integration theory. *Communication Monographs*, 63, 189-207.
- Fraenkel, J. R., & Wallen, N. E. (2005). Validity and reliability. In J. R. Fraenkel & N. E. Wallen, *How to design and evaluate research in education with PowerWeb*, pp. 152-171, Hightstown, NJ: McGraw Hill Publishing Co.
- Frankfort, J. (2016). What is a nudge and how can it help more college students graduate? [White paper]. Retrieved January 30, 2018, from Persistence Plus Network: <https://www.persistenceplusnetwork.com/wp-content/uploads/2016/06/pp-nudge-paper.pdf>
- Gelo, O., Braakmann, D., & Benetka, G. (2008). Quantitative and qualitative research: Beyond the debate. *Integrative Psychological and Behavioral Science*, 42(3), 266-290.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference*. 11.0 update (4th ed.). Boston: Allyn & Bacon.
- Goforth, C. (2015, November 16). Using and interpreting Cronbach's Alpha. Retrieved from <http://data.library.virginia.edu/using-and-interpreting-cronbachs-alpha/>.
- Gordon, V. N., Habley, W. R., & Grites, T. J. (2008). *Academic advising: A comprehensive handbook*. San Francisco, CA: Jossey-Bass.
- Greco, V. & Roger, D. (2001) Coping with uncertainty: The construction and validation of a new measure. *Personality and Individual Differences*, 31(2001), 519-534.
- Greene, J. C. (2007). *Mixed methods in social inquiry*. San Francisco, CA: Jossey-Bass.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, 11(3), 255-274.
- Guskey, T. R. (1985). Staff development and teacher change. *Educational Leadership*, 57-60.

- Hall, G. & Hord, S. (2011). *Implementing change: Patterns, principles and potholes*. New York, NY: Ablongman Pearson Education.
- Hanson, T., Drumheller, K., Mallard, J., Mckee, C., & Schlegel, P. (2010). Cell Phones, Text Messaging, and Facebook: Competing Time Demands of Today's College Students. *College Teaching*, 59(1), 23-30.
- Heath, C., & Heath, D. (2010). *Switch: How to change things when change is hard* (1st ed.). New York, NY: Broadway Books.
- Herr, K., & Anderson, G. L. (2015). *The action research dissertation: A guide for students and faculty* (2nd ed.). Thousand Oaks, CA: Sage.
- Huggett, K. (2004). Advising in undergraduate honors programs: A learner-centered approach, *NACADA Journal*, 24(1), 75-87.
- Humphrey, T. (2008). The genesis of an idea. In P.C. Sederberg (Ed.), *The honors college phenomenon* [Monograph]. *NCHC Monographs Series*, 4, p. 11-23.
- Ivankova, N. V. (2015). *Mixed methods applications in action research: From methods to community action*. Thousand Oaks, CA: Sage.
- Jordan, M. E. & Babrow, A. S. (2013). Communication in creative collaborations: The challenges of uncertainty and desire related to task, identity, and relational goals. *Communication Education*, 62(2), 210-232.
- Junco, R. & Mastrodicasa, J. (2007). *Connecting to the net.generation: What higher education professionals need to know about today's students*. Washington, D.C.: NASPA, Student Affairs Administrators in Higher Education.
- Junco, R., Mastrodicasa, J. M., Aguiar, A. V., Longnecker, E. M., & Rokkum, J. N. (2016). Impact of technology-mediated communication on student evaluations of advising. *NACADA Journal*, 36(2), 54-66. Retrieved from <https://doi.org/10.12930/NACADA-16-014>
- King, M. C. & Kerr, T. J. (2005). Academic advising. In M. L. Upcraft, J. N. Gardner, & B. O. Barefoot (Eds.), *Challenging and supporting the first-year student: A handbook for improving the first year of college* (pp. 320-338). San Francisco, CA: Jossey-Bass.
- Kornilova, T. V. & Kornilov, S. A. (2010). Intelligence and tolerance/intolerance for uncertainty as predictors of creativity. *Psychology in Russia: State of the Art*, 240-256.
- Light, R. J. (2001). *Making the most of college: Students speak their minds*. Cambridge, MA: Harvard University Press.

- Mertler, C. A. (2014). *Action research: Improving schools and empowering educators* (4th ed.). Thousand Oaks, CA: Sage.
- Miller, P. R. (n.d.). *Tipsheet: Improving response scales*. Durham, NC: Duke University. Retrieved from https://dism.ssri.duke.edu/sites/dism.ssri.duke.edu/files/pdfs/Tipsheet-Response_Scales.pdf
- Naismith, L. (2007). Using Text Messaging to Support Administrative Communication in Higher Education. *Active Learning in Higher Education*, 8(2), 155-171.
- National Academic Advising Association: The Global Community for Academic Advising. (2006). *NACADA concept of academic advising*. Retrieved from <http://www.nacada.ksu.edu/Resources/Clearinghouse/View-Articles/Concept-of-Academic-Advising-a598.aspx>
- National Center for Education Statistics. (2018). Integrated postsecondary education data sets [Data file]. Retrieved from <https://nces.ed.gov/ipeds>
- National Collegiate Honors Council. (2017). *Basic characteristics of a fully developed honors program or college*. Retrieved from https://www.nchchonors.org/uploaded/NCHC_FILES/PDFs/NCHC_Basic_Characteristics_2014.pdf
- National Collegiate Honors Council. (2015). *Member institutions*. Retrieved from <http://nchchonors.org/members-area/member-institutions-4/>
- Noel, L., Levitz, R., & Saluri, D. (1985). *Increasing student retention*. San Francisco, CA: Jossey-Bass.
- Olejnik, & Algina. (2000). Measures of Effect Size for Comparative Studies: Applications, Interpretations, and Limitations. *Contemporary Educational Psychology*, 25(3), 241-286.
- Palinkas, L. A., Aarons, G. A., Horwitz, S., Chamberlain, P., Hurlburt, M., & Landsverk, J. (2010). Mixed method designs in implementation research. *Administration and policy in mental health*, 38(1), 44-53.
- Pemberton, C. L. A. (2012). A "how-to" guide for the education thesis/dissertation process. *Kappa Delta Pi Record*, 48(2), 82-86. Retrieved from <http://login.ezproxy1.lib.asu.edu/login?url=https://search-proquest-com.ezproxy1.lib.asu.edu/docview/1314327541?accountid=4485>
- Pintrich, P. R. & DeGroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40.

- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Thousand Oaks, CA: Sage.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.
- Shaw, K., Holbrook, A., & Bourke, S. (2013). Student experience of final-year undergraduate research projects: An exploration of 'research preparedness'. *Studies in Higher Education*, 38(5), 711-727.
- Smith, M. L., & Glass, G. V. (1987). Experimental studies. In M. L. Smith & G. V. Glass, *Research and evaluation in education and the social sciences*, pp. 124-157, Needham Heights, MA: Allyn and Bacon.
- Sorrentino, R. M., & Roney, C. J. R. (2000). *The uncertain mind: Individual differences in facing the unknown*. Philadelphia, PA: Psychology Press.
- Supiano, B. (2018, February 23). You can help make sure freshmen show up. Here's how. *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/You-Can-Help-Make-Sure/242567>
- Sutton, R. I., & Rao, H. (2014). *Scaling up excellence: Getting to more without settling for less*. New York, NY: Crown Business.
- Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, 1(1), 77-100.
doi:10.1177/2345678906292430
- Thaler, R., & Sunstein, C. (2009). *Nudge: Improving decisions about health, wealth, and happiness*. New York: Penguin Books.
- Thayer-Hart, N., Dykema, J., Elver, K., Schaeffer, N. C., & Stevenson, J. (2010). *Survey fundamentals: A guide to designing and implementing surveys*. Madison, WI: University of Wisconsin Survey Center.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.
- Tinto, V. (1999). Taking student retention seriously: Rethinking the first year of college. *NACADA Journal*, 19(2), 5-9.
- Ward, G., & Dixon, H. (2014). The research masters experience: The impact of efficacy and outcome expectations on enrolment and completion. *Journal of Further and Higher Education*, 38(2), 163-181.

- Weick, K. E. (1984). Small wins: Redefining the scale of social problems. *American Psychologist*, 39(1), 40-49.
- Weick, K. E. (1986). Small wins: Redefining the scale of social issues. In E. Seidman & J. Rappaport (Eds.), *Redefining social problems* (pp. 29-48). New York, NY: Springer Science + Business Media.
- Weitzel, J., Bernhardt, J., Usdan, S., Mays, D., & Glanz, K. (2007). Using wireless handheld computers and tailored text messaging to reduce negative consequences of drinking alcohol. *Journal of Studies on Alcohol and Drugs*, 68(4), 534-537.
- Wilcox, D. (2017, November). *Changing expectations for career advising: Embracing and making use of uncertainty and career indecision*. Plenary panel presented at the annual meeting of National Academic Advising Association, St. Louis, MO.
- Xu H. & Tracey, T. J. (2014). The role of ambiguity tolerance in career decision making. *Journal of Vocational Behavior*, 85(2014), 18-26.
- Xu, H. & Tracey, T. J. (2015). Career decision ambiguity tolerance scale: Construction and initial validations. *Journal of Vocational Behavior*, 88(2015), 1-9.

APPENDIX A
CYCLE 0 INTERVIEW QUESTIONS

Interview Questions for Staff

Hello, thank you for making time to speak with me today. We'll be here for about twenty to thirty minutes. The reason we're here today is to get your thoughts, as an honors advisor. The conversation will be recorded so that I can recall the conversation.

I'm going to ask you a few questions related to honors advising and uncertainty, but the questions are just a starting point. Feel free to talk about things that I don't ask a direct question about. Your input will inform a study that seeks to improve honors advising in Barrett, The Honors College.

1. What do best practices in honors advising look like? Please give specific examples.
2. On a scale of 1-10, how would you rate yourself on advising practices? How would you rate the honors advising team? Please explain.
3. You've been through our new advisor training and participated in some refresher activities. What do you think works well? What could be improved upon?
4. What skills and resources do honors advisors need to continually improve advising practices? How can our team sustain skillsets for processes or situations that only come up once or twice per year?
5. Do you feel there are areas of uncertainty or ambiguous situations, both in your advising practices and for the students? In your opinion, how does uncertainty impact honors advising (for advisor, for students)?
6. If so, how do you manage this uncertainty? How do you help students manage uncertainty?
7. What practices should Barrett advisors add that are not being done now?
8. Other comments? Is there anything else you would like me to know?

Thanks for coming today and talking about honors advising. Your comments have given me lots of different ways to see this issue. Thank you!

Interview Questions for Students

Hello, thank you for making time to speak with me today. We'll be here for about twenty to thirty minutes. The reason we're here today is to get your thoughts, as an honors student. The conversation will be recorded so that I can recall the conversation.

I'm going to ask you a few questions related to honors advising and uncertainty, but the questions are just a starting point. Feel free to talk about things that I don't ask a direct

question about. Your input will inform a study that seeks to improve honors advising in Barrett, The Honors College.

1. Based on your understanding, what is the role of honors advisors? What do you expect to gain from honors advising?
2. On a scale of 1-10, how would you rate your experiences with Barrett honors advising? Please explain.
3. What does an ideal honors advising appointment look like to you?
4. What is your honors advisor knowledgeable about?
5. What skills could your honors advisor improve on?
6. While going through honors, did you find there were areas of uncertainty or things that were ambiguous? What were they?
7. If yes, what were they? How did you deal with this? Did honors advising help, or how could it have helped?
8. Are you satisfied with honors advising? Why or why not?
9. If you weren't required to meet with your honors advisor, would you choose to? Why or why not?
10. Other comments? Is there anything else you would like me to know?

Thanks for coming today and talking about honors advising. Your comments have given me lots of different ways to see this issue. Thank you!

APPENDIX B
CYCLE 1 SURVEY

Survey Questions, Cycle 1

Starting the Honors Thesis

We are asking for your help to complete this online survey which should take approximately 5 minutes. Two \$10 gift cards will be raffled off to research participants upon completion of the research cycle.

Your participation in this study is voluntary. If you choose not to participate or withdraw from the study at any time, there will be no penalty whatsoever. You must be 18 years of age or older to participate. There are no foreseeable risks or discomforts to your participation.

Your responses will be confidential. You will be asked to enter your student ID number to match up with thesis deadline information. Once this has been matched, your ID number will be removed and a random number will be assigned to your responses. All information you report will be kept strictly confidential and anonymous.

This study has been reviewed and approved by the Arizona State University Institutional Review Board. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. If you have any questions concerning the research study, please contact the research team – Michelle Jordan at Michelle.E.Jordan@asu.edu or (480) 965-9663 or Trisha Eardley at Trisha.Eardley@asu.edu or (480) 727-0447.

- 1) Consent Statement: I understand that participation is voluntary and that my information will be kept confidential. I am at least 18 years of age.
 - I agree (choosing this will continue to survey)

- 2) ASU ID number: _____

For the questions below, choose the number that most accurately describes your opinion on the statement. Use the following scale: 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, 6=strongly agree.

- 3) I prefer familiar environments and situations.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

- 4) I thrive when working through challenging problems, even when the answer is unclear.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

- 5) I prefer to have all of the steps in a process clearly laid out before starting.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

1	2	3	4	5	6
---	---	---	---	---	---

- 6) Novel experiences are opportunities to learn.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

- 7) When I don't know how to act in a situation, I tend to act the same as I have in the past.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

- 8) When confronted with the unknown, I try multiple strategies.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

- 9) I have developed reliable strategies to approach most situations.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

- 10) I am continually changing how I approach new situations.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

For the next group of questions, think back to before you started your honors thesis/creative project when you were in the exploration phase.

- 11) Think back to when you were identifying a topic for your honors thesis/creative project. Which statement describes your experience best?

- I had a topic ready to go.
- I had many potential ideas to consider.
- It was difficult to identify potential topics.
- I didn't find a thesis topic.
- Other: _____.

- 12) How many topics did you consider before identifying your topic of study?

- a. I did not find a topic.
- b. I used the first topic that I thought about.
- c. I considered two topics.
- d. I considered three topics.
- e. I considered four topics.
- f. I considered five or more topics.

13) When identifying ideas and topics for your honors thesis/creative project, what strategy or strategies did you use? Select all that apply.

- a. Reflect on past classes or projects.
- b. Think about my interests and goals for ideas.
- c. Ask others for help.
- d. Pick an idea that seems easy to do, even if it's not of great interest to me.
- e. Avoid thinking about it.
- f. Other: _____

14) Think back to when you were finding faculty to work with on your honors thesis/creative project committee. Which statement describes your experience best?

- a. I had a faculty member in place to work with.
- b. I only talked with faculty I knew.
- c. I talked with both faculty I already knew and faculty that I didn't previously know.
- d. I never found a thesis director.
- e. Other: _____.

15) How many faculty members did you talk with before finding your thesis director?

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4
- f. 5+

16) When initially looking for faculty to work with on your honors thesis/creative project, what strategy or strategies did you use? Select all that apply.

- a. Think about faculty that I've worked with in past classes or experiences.
- b. Reach out to faculty based on research interests even if I've never had that professor in class before.
- c. Network with my Faculty Honors Advisor.
- d. Ask others for recommendations.
- e. Put off talking with faculty.
- f. Other: _____

17) Did uncertainty in the thesis process impact your ability to get started with your honors thesis?

- a. Yes
- b. No
- c. Maybe

18) If yes or maybe, please describe in 4-5 sentences.

19) Thank you for your participation! At the end of this research cycle, two \$10 gift cards will be raffled off. If you would like to be entered in the raffle, please provide your email address below. Entering this raffle is optional. Your email address will be kept separately from your survey results, and email addresses will be deleted once the raffle is complete.

- Email: _____ (optional)

APPENDIX C
CYCLE 2 SURVEY

Cycle 2 Thesis Launch Survey

Thank you for participating in Thesis Launch. This program is designed to help students start the honors thesis process. You are being asked to complete a short survey now and a second survey at the end of the program. Your responses will help us improve this program for future students. Your responses will be confidential. Results from this study may be used in reports, presentations, or publications, but your name will not be used.

General Thesis Information [Included in pre-test and post-test]

In this section, please answer questions pertaining to general information about where you are at in the thesis process.

1. To ensure confidentiality, please enter your unique identifier that will be known only to you. It will consist of the first three letters of your mother's first name and the last four digits of your phone number. (For example, Mar0789 would be the identifier for a person whose mother is Mary and whose phone number is 480-585-0789.) _____
2. I have identified my thesis topic.
 - a. Yes/No
3. I have found my thesis director.
 - a. Yes/No
4. I have found my second committee member.
 - a. Yes/No
5. I have turned in my prospectus?
 - a. Yes/No

Thesis Barriers: [Included in pre-test and post-test]

In this section, please answer questions about what you now see as barriers in the thesis process. To what extent do you agree for each of the following:

6. Procrastination keeps me from starting the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

7. I don't know where to start on the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

8. I feel overwhelmed to start the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

9. I feel anxious or nervous to start the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

10. I am unsure how to approach professors to start the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

11. I don't know which professors to approach to talk about the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

12. I don't have any research ideas for the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

13. I don't know how to talk about my research ideas for the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

14. Please elaborate on barriers that kept you from taking action on your honors thesis. Please respond in 1-2 sentences.

15. What are barriers that you now perceive as you progress further with your honors thesis? Please respond in 1-2 sentences.

Self-efficacy: [Included in pre-test and post-test]

In this section, please answer questions pertaining to self-efficacy and the honors thesis process. Self-efficacy refers to your belief in your ability to complete a task or be successful in a situation. To what extent do you agree with each of the following:

16. I am ready to do an honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

17. I am confident that I can complete an honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

18. An honors thesis seems like something I can do.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

19. I am confident that I can complete the prospectus.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

20. I can complete my prospectus by the deadline.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

21. I am certain I can find two thesis committee members and write up a proposal of my research.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

22. I am confident talking with professors about the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

23. I can ask professor to support my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

24. Collaborating with professors is something that I am prepared to do for my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

Demographic information: [Included in pre-test]

In this section, please answer questions about your background.

25. Year in School:

- a. 1st year
- b. 2nd year
- c. 3rd year
- d. 4th year

26. My primary major is: _____

27. My GPA is:

- a. 3.75 - 4.00+
- b. 3.50 – 3.74
- c. 3.25 – 3.49
- d. 3.00 – 3.24
- e. 0.00 – 2.99

28. I am a first-generation college student (neither of my parents completed college).

- a. Yes/No

29. I identify as:

- a. Male
- b. Female
- c. Other

30. Ethnicity:

- a. White
- b. Hispanic or Latino
- c. Black or African American
- d. Native American or American Indian
- e. Asian/Pacific Islander
- f. Other

31. Age: _____

Thank you!

Thank you for completing the Thesis Launch questionnaire! Your participation in the program is greatly appreciated. If you have any questions concerning this research study or the questionnaire, please contact Trisha Eardley at trisha.eardley@asu.edu or 480-727-0447.

Task Completion with Small Wins: [Included in post-test]

In this section, please answer questions pertaining to completing tasks with small wins. Small wins are accomplished when a larger goal is broken down into smaller goals with concrete, achievable goals. To what extent do you agree with each of the following:

32. I felt like I accomplished something towards my goal of starting my thesis by utilizing Thesis Launch.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

33. I made progress on starting my thesis by following the steps provided in Thesis Launch.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

34. The work I did in Thesis Launch helped me build momentum to start my thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

35. Having specific weekly goals encouraged me to take action to start my thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

36. By completing small tasks, I built momentum for my thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

37. I found it helpful to have weekly action items laid out for me.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

Technology: [Included in post-test]

In this section, please answer questions pertaining to the role of technology in your Thesis Launch experience. To what extent do you agree with each of the following:

38. I took action on my thesis because of the weekly text reminders.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

39. It was helpful to have weekly action items sent to me each week.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

40. Getting text message reminders is convenient to my lifestyle.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

41. I am more likely to use online resources than an in-person workshop or appointment.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

42. Online resources are just as valuable as in-person resources.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

Thesis Launch Resources: [Included in post-test]

In this section, please answer questions about the resources you used in Thesis Launch.

For the next 8 questions, think about the resources you used while working through Thesis Launch. To what extent did you find each of the following helpful:

43. Thesis Launch text reminders

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

44. Thesis Launch website

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

45. Resources linked through Thesis Launch (such as Brainstorm exercise, Elevator pitch, Introduction template, etc.)

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

46. In-person thesis workshop

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

47. Online thesis workshop

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

48. Individual honors advising appointment

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

49. Thesis Launch advising office hours

Very Helpful	Helpful	Slightly Helpful	Slightly Not Helpful	Not Helpful	Strongly Not Helpful	N/A: Did not use
--------------	---------	------------------	----------------------	-------------	----------------------	------------------

50. Were there other resources you used? Please specify: _____

Thank you!

Thank you for completing the Thesis Launch questionnaire! Your participation in the program is greatly appreciated. If you have any questions concerning this research study or the questionnaire, please contact Trisha Eardley at trisha.eardley@asu.edu or 480-727-0447.

APPENDIX D
BRAINSTORM PAGE

Thesis Launch

Brainstorm Worksheet

Research Interest: (could be your interest or the interest of a professor you would like to work with)

Why you want to study this topic:

What you already know about the topic:

Cube it! Cubing is a brainstorming technique that helps you explore an idea from multiple perspectives:

Describe It:	Compare It: What is it similar to? Different from?
Associate It: What does it make you think of?	Analyze It: Break the idea into parts.
Apply It: Describe uses or applications.	Argue For or Against It: Take a stand.

Cubing exercise adapted from: <http://www.essay.uk.com/guides/dissertation/research-topics-dissertation-topics.php>

Summarize what you already know about the topic: (include any prior research you've completed)

Possible argument or research question:

What you need to find out about the topic: (what are gaps in your knowledge?)

Possible sources and research strategies: (databases, search terms, experts, etc.)

APPENDIX E

ELEVATOR PITCH AND INTRODUCTION EMAIL

Thesis Launch

Honors Thesis Elevator Pitch TEMPLATE

Personal intro and explanation of why you are contacting the professor:

Connection with the professor or with the research area:

Explanation of project idea (try to connect with the professor's area of research):

Explanation of personal research thus far (background, literature review, related class projects, etc.):

Details about your outline or thought-map (use your Brainstorm worksheet to help):

Tie back to the professor's area of research, and ask for guidance and feedback:

[THIS IS WHERE YOU WILL HAVE A CONVERSATION WITH THE PROFESSOR ABOUT HIS/HER RESEARCH AND HOW YOUR THESIS COULD FIT IN. A SPIRIT OF FLEXIBILITY AND COLLABORATION IS KEY ON YOUR PART.]

If this professor seems like a match:

- Ask if he/she would be willing to serve as your thesis director (or second committee member).
- Share the Thesis/Creative Project Committee Guidelines document.
- Establish your next meeting. Confirm with the professor what work you'll do in the meantime.
- Thank the professor for his/her time.

If this professor is not a match:

- Express your thanks to the professor for meeting with you.
- Ask for referrals to other professors.

Thesis Launch

Honors Thesis Email Introduction TEMPLATE

Dear Professor _____,

My name is _____, and I am a _____ major. I am beginning the work for my honors thesis requirement for Barrett, The Honors College with the hope of working on my thesis _____ to _____ semesters.

I have read your faculty profile, and your background in _____ stood out to me. I also have an interest in _____, and I would like to learn more about your current research.

I would like to speak with you to discuss working together on my honors thesis project. I am interested in the topic of _____ because _____. [IN A FEW SENTENCES, ELABORATE MORE ON YOUR INTERESTS AND IDEAS. TRY TO TIE YOUR IDEAS TO THE PROFESSOR'S AREA OF RESEARCH. SHARE ANY RELATED WORK OR BACKGROUND RESEARCH YOU HAVE STARTED.]

I have attached my resume for you to review. I contacted you because of our common interests, and I am open to adjusting the scope of my research to more closely align with your areas of expertise. May I come to your office hours to discuss further? Please let me what times would be convenient for you. Thank you for your time.

Sincerely,

Honors Thesis Email Introduction SAMPLE

Dear Professor Jones,

My name is Taylor Green, and I am a Political Science major with a Justice Studies minor. I am beginning the work for my honors thesis requirement for Barrett, The Honors College with the hope of working on my thesis Fall 2016-Spring 2017 semesters.

I have read your faculty profile, and your background in juvenile justice stood out to me. I also have an interest in juvenile justice, and I would like to learn more about your current research.

I would like to speak with you to discuss working together on my honors thesis project. I am interested researching the effects of different justice systems on juvenile defendants, with a focus on the various types of restorative justice. I noticed that you have a research publication on restorative justice, and I have reviewed it through the ASU Library. This is a topic that I recently explored for a class project in JUS 300 last semester, and I'd be happy to share that paper for your review. In particular, I've found the work of legal scholars Anthony Walsh and Craig Hemmens to be intriguing. I think restorative justice is a promising approach when working with juveniles.

I have attached my resume for you to review. I contacted you because of our common interests, and I am open to adjusting the scope of my research to more closely align with your areas of expertise. May I come to your office hours to discuss further? Please let me what times would be convenient for you. Thank you for your time.

Sincerely,

Taylor Green

Arizona State University, Class of 2017

Political Science major, Justice Studies minor

Barrett, The Honors College student

APPENDIX F

PROSPECTUS PLANNING PAGE

Prospectus Planning Document

Describe your topic/idea and the goals for your thesis/creative project:

Describe how you will conduct research for your thesis/creative project:



Examples:

- Books and academic journals
- Analyze available data
- Conduct interviews, focus groups, surveys, etc.
- Lab procedures

How often will you meet with your Director?
What are the expectations for these meetings?

How often will you meet with your Second
Committee Member?
What are the expectations for these meetings?

List your goals and due dates for the FIRST
SEMESTER:

List your goals and due dates for the SECOND
SEMESTER. Include timeline for preparing for
your defense:

APPENDIX G

THESIS LAUNCH TEXT MESSAGES AND SCHEDULE

Thesis Launch Text Messages used: <https://www.remind.com>

Week 1: Learn: Sept 16-22: <https://goo.gl/QxHR7A>

Welcome: Sent when signed up

Welcome to Thesis Launch! Starting 9/16, you'll get weekly reminders to help you begin the thesis. Check out this video to see what's to come! <https://goo.gl/jAHp11>

9/16/18, 3pm

Welcome to Thesis Launch! Let's spend the next 6 weeks on your honors thesis. You'll receive reminders with 3 steps to complete each week.

Week 1: 9/16/18, 3:01pm

Thesis Launch, WEEK 1: What is a thesis, and why is it important to you? Click here to plan your steps for this week! <https://goo.gl/QxHR7A>

Week 1b: 9/20/18, 5pm

Grads say the thesis was their proudest accomplishment. Reflect why you want to finish yours in your online journal: <https://goo.gl/forms/qppfXjYVYbcSq4Yq2>

Week 1c: 9/21/18, 11am

Thesis Launch Reminders: <https://goo.gl/QxHR7A>.

Want to talk to someone? Come to advisor office hours in HH 239, Fridays 3:30-5:30pm.

Week 2: Explore: Sept 23-29: <https://goo.gl/YC3oNd>

Week 2: 9/23/18, 3pm

Thesis Launch, WEEK 2: What does a completed thesis look like? Check out examples and find professors to work with. <https://goo.gl/YC3oNd>

Week 2b: 9/26/18, 5pm & 5:01pm

Think about how the thesis will help you meet your goals, and why do you think professors want to work with students on the honors thesis?

Reflect more in your online journal: <https://goo.gl/forms/qppfXjYVYbcSq4Yq2>

Week 2c: 9/28/18, 11am

Week 2 is about exploring past thesis projects to get ideas!

Week 2 goals: <https://goo.gl/YC3oNd>.

Week 2 journal: <https://goo.gl/forms/qppfXjYVYbcSq4Yq2>

Week 3: Envision: Sept 30-Oct 6: <https://goo.gl/RfT4M6>

Week 3: 9/30/18, 3pm

Brainstorm time! Explore your ideas and build off the interests of professors on your list. <https://goo.gl/RfT4M6>

Week 3c: 10/4/18, 11am

Try a brainstorming exercise: <https://goo.gl/RfT4M6>.

Want to talk to someone? Office hours today: HH 239, 3:30-5:30pm. (Ask to see Trisha)

Week 3c: 10/5/18, 11am

80% of students go through multiple thesis ideas before finding a topic. Write Plan A and Plan B in your online journal: <https://goo.gl/forms/qqpFXjYVYbcSq4Yq2>

Week 4: Prepare: Oct 7-13: <https://goo.gl/fB8s2X>

Week 4: 10/7/18, 3pm

Thesis Launch, WEEK 4: Not sure how to approach professors for your thesis committee? Don't worry, help is here! <https://goo.gl/fB8s2X>

Week 4b: 10/10/18, 5pm & 5:01pm

Most students will talk with professors they didn't know about thesis ideas. Use Thesis Launch to help you make a good first impression.

How comfortable do you feel reaching out to professors? Reflect on this in your weekly journal: <https://goo.gl/forms/qqpFXjYVYbcSq4Yq2>

Week 4c: 10/12/18, 11am

Have you reached out to professors yet?

Week 4 goals: <https://goo.gl/fB8s2X>.

Week 4 journal: <https://goo.gl/forms/qqpFXjYVYbcSq4Yq2>

Week 5: Collaborate & Persevere: Oct 14-20: <https://goo.gl/4pRhBd>

Week 5: 10/14/18, 3pm

Thesis Launch, WEEK 5: Time to meet with professors. Practice your elevator pitch. You've got this! <https://goo.gl/4pRhBd>

Week 5b: 10/18/18, 5pm & 5:01pm

Have you had your first professor meeting? How about a second? Most students meet with several professors before finding a thesis director.

How is this week going? Jot down your thoughts in your online journal:

<https://goo.gl/forms/qqpFXjYVYbcSq4Yq2>

Week 5c: 10/19/18, 11am

Thesis Launch Reminders! Week 5 goals: <https://goo.gl/4pRhBd>.

Want to talk to someone? Come to office hours: HH 239, Friday 3:30-5:30pm.

Week 6: Launch: Oct 21-27: <https://goo.gl/46nL82>

Week 6: 10/21/18, 3pm

Thesis Launch WEEK 6: Found your thesis director? Next, the prospectus! Still meeting with professors? Keep going! <https://goo.gl/46nL82>

Week 6b: 10/24/18, 5pm & 5:01pm

How could you talk about the thesis in an interview? You're practicing communication, critical thinking, professionalism, and collaboration.

Write about what you've learned in your online journal:

<https://goo.gl/forms/qqpFXjYVYbcSq4Yq2>

Week 6c: 10/26/18, 11am

We're in Week 6, but feel free to go back to previous weeks!

Week 6 goals: <https://goo.gl/46nL82>.

Week 6 journal: <https://goo.gl/forms/qqpfxjYVYbcSq4Yq2>

Follow-up: 10/27/18, 3pm

Thank you for participating in thesis launch! Please complete a FINAL, short survey.

<https://goo.gl/forms/ARWdUIRspzoUODEz1>

Follow-up: 10/28/18, 3pm, 3:01pm, & 3:02pm

The Priority Prospectus Deadline is Nov 2. Are you ready? It's ok to go back to previous weeks if you need to! <https://goo.gl/jAHp11>

Not going to make the Priority Prospectus date? That's ok. You have until the Final deadline of 2/15/19 to start your thesis this spring.

Please complete the final survey to help us help other students!

<https://goo.gl/forms/ARWdUIRspzoUODEz1>

Follow-up b: 11/1/18, 5pm

Help make Thesis Launch better! Please take a final survey to help us improve the program. <https://goo.gl/forms/ARWdUIRspzoUODEz1>

APPENDIX H
THESIS LAUNCH SURVEY

Thesis Launch Survey

Thank you for participating in Thesis Launch. This program is designed to help students start the honors thesis process. You are being asked to complete a short survey now and a second survey at the end of the program. Your responses will help us improve this program for future students. Your responses will be confidential. Results from this study may be used in reports, presentations, or publications, but your name will not be used.

1. To ensure confidentiality, please enter your unique identifier that will be known only to you. It will consist of the first three letters of your mother's first name and the last four digits of your phone number. (For example: Mar0789 would be the identifier for a person whose mother is Mary and whose phone number is 480-585-0789.) _____

Thesis Barriers: [Included in pre-test and post-test]

In this section, please answer questions about what you now see as barriers in the thesis process. To what extent do you agree for each of the following:

2. I don't know where to begin on the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

3. I am unsure how to approach professors about the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

4. I don't have ideas for the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

5. I feel overwhelmed with the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

6. I feel anxious about the honors thesis process.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

7. Procrastination keeps me from taking action on the honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

8. Please write 1-2 sentences explaining what you perceive as barriers that have kept you from beginning your honors thesis. [pre-test]

Please write 1-2 sentences explaining what you now perceive as barriers to moving forward with your honors thesis. [post-test]

Honors Thesis: [Included in pre-test and post-test]

In this section, please answer questions pertaining to your ability to proceed with the honors thesis process. Be sure to answer every item, even if it sounds similar to other items. To what extent do you agree with each of the following:

9. I am ready to begin my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

10. An honors thesis seems like something I can do.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

11. If starting my honors thesis doesn't go as planned, I will keep trying.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

12. I can write up a proposal of my research to begin my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

13. To begin my thesis work, I believe I can complete the prospectus by the deadline.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

14. I am confident that I can talk with professors about research topics for my thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

15. I can ask a professor to support my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

16. I am certain I can find two thesis committee members.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

17. Collaborating with professors is something that I am prepared to do for my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

18. I am comfortable communicating with professors about my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

19. I am confident in my ability to finish my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

20. I intend to fulfill the honors thesis requirement.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

21. My honors thesis is important to me, so I will work to complete it.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

22. I expect the honors thesis will require a great deal of effort. Nevertheless, I will finish it.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

23. I can complete my honors thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

Demographic information: [Included in pre-test]

In this section, please answer questions about your background.

24. My primary major is: _____

25. Any additional majors: _____

26. My GPA is: _____

27. I am a first-generation college student, meaning that neither of my parents completed college.

a. Yes/No

28. I identify as:

- a. Male
- b. Female
- c. Other

29. Ethnicity:

- a. White
- b. Hispanic or Latino
- c. Black or African American
- d. Native American or American Indian
- e. Asian/Pacific Islander
- f. Other

30. Age: _____

Thank you!

Thank you for completing the Thesis Launch questionnaire! Your participation in the program is greatly appreciated. If you have any questions concerning this research study or the questionnaire, please contact Trisha Eardley at trisha.eardley@asu.edu or 480-727-0447.

Task Completion: [Included in post-test]

In this section, please answer questions pertaining to completing thesis-related tasks. To what extent do you agree with each of the following:

31. I felt like I accomplished something towards my goal of beginning my thesis by utilizing Thesis Launch.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

32. I made progress on beginning my thesis by following the steps provided in Thesis Launch.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

33. The work I did in Thesis Launch helped me build momentum to start my thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

34. Completing small tasks pushed me to spend more time working on my thesis.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

35. I found it helpful to have weekly action items that I was supposed to do.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

Technology: [Included in post-test]

In this section, please answer questions pertaining to the role of technology in your Thesis Launch experience. To what extent do you agree with each of the following:

36. It was helpful to have weekly action items sent to me each week.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

37. I took action on my thesis because of the weekly text reminders.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

38. Getting text message reminders is convenient to my lifestyle.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

39. I am more likely to use online resources than an in-person workshop or appointment.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

40. I like that Thesis Launch resources are primarily online and text based resources.

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
----------------	-------	----------------	-------------------	----------	-------------------

Thesis Launch Resources: [Included in post-test]

In this section, please answer questions about the resources you used in Thesis Launch.

For the next 8 questions, think about the resources you used while working through Thesis Launch:

41. Thesis Launch text message reminders

a. How frequently did you use Thesis Launch text message reminders?

Frequently	Sometimes	Rarely	Never
------------	-----------	--------	-------

b. How beneficial were the Thesis Launch text message reminders?

Very Beneficial	Somewhat Beneficial	Not Very Beneficial	Not at All Beneficial
-----------------	---------------------	---------------------	-----------------------

42. Thesis Launch website

a. How frequently did you use the Thesis Launch website?

Frequently	Sometimes	Rarely	Never
------------	-----------	--------	-------

- a. How beneficial was the Thesis Launch website?

Very Beneficial	Somewhat Beneficial	Not Very Beneficial	Not at All Beneficial
-----------------	---------------------	---------------------	-----------------------

43. Resources linked through Thesis Launch (such as Brainstorm exercise, Elevator pitch, FHA list, etc.)

- a. How frequently did you use resources linked through Thesis Launch?

Frequently	Sometimes	Rarely	Never
------------	-----------	--------	-------

- b. How beneficial were the resources linked through Thesis Launch?

Very Beneficial	Somewhat Beneficial	Not Very Beneficial	Not at All Beneficial
-----------------	---------------------	---------------------	-----------------------

44. Online thesis workshop through Blackboard

- a. How frequently did you use the online thesis workshop through Blackboard?

Frequently	Sometimes	Rarely	Never
------------	-----------	--------	-------

- b. How beneficial was the online thesis workshop through Blackboard?

Very Beneficial	Somewhat Beneficial	Not Very Beneficial	Not at All Beneficial
-----------------	---------------------	---------------------	-----------------------

45. In-person resources (in-person thesis workshop, in-person advising, etc.)

- a. How frequently did you use the in-person resources?

Frequently	Sometimes	Rarely	Never
------------	-----------	--------	-------

- b. How beneficial were the in-person resources?

Very Beneficial	Somewhat Beneficial	Not Very Beneficial	Not at All Beneficial
-----------------	---------------------	---------------------	-----------------------

46. Were there other resources you used? Please specify: _____

47. Please provide overall feedback on Thesis Launch. _____

Thank you!

Thank you for completing the Thesis Launch questionnaire! Your participation in the program is greatly appreciated. If you have any questions concerning this research study or the questionnaire, please contact Trisha Eardley at trisha.eardley@asu.edu or 480-727-0447.

APPENDIX I

THESIS LAUNCH: ONLINE REFLECTION JOURNAL

Thesis Launch: Online Reflection Journal

Thank you for participating in Thesis Launch. Please fill out this online reflection journal for each week. Your responses will help us improve this program for future students. Your responses will be confidential. Results from this study may be used in reports, presentation, or publications, but your name will not be used.

1. This journal entry is for:
 - a. Week 1: Learn
 - b. Week 2: Explore
 - c. Week 3: Envision
 - d. Week 4: Prepare
 - e. Week 5: Collaborate & Persevere
 - f. Week 6: Launch
2. To ensure confidentiality, please enter your unique identifier that will be known only to you. It will consist of the first three letters of your mother's first name and the last four digits of your phone number. (For example, Mar0789 would be the identifier for a person whose mother is Mary and whose phone number is (480) 585-0789.)
 - a. _____
3. Time spent on thesis-related work this week: (example: 20 minutes, 1.5 hours, etc.)
 - a. _____
4. The resources I used this week: (check all that apply)
 - a. Thesis Launch text reminder
 - b. Thesis Launch website
 - c. Resources linked through Thesis Launch website
 - d. In-person thesis workshop
 - e. Online thesis workshop
 - f. Individual honors advising appointment
 - g. Thesis Launch office hours
 - h. None
 - i. Other:
5. This week, I worked on: (Please answer in 1-3 sentences.)
6. Reflection question varies by week. (Please answer in a short paragraph.)
 - a. Week 1: Why is completing an honors thesis important to me? Learning job skills? Collaborating with experts? Personal perseverance? Completing a challenge? Or something else?
 - b. Week 2: How is the thesis valuable to me and my goals? What do professors get out of working with students on the honors thesis?

- c. Week 3: What is my Plan A and my Plan B for my thesis work? How will I pivot if things don't go according to plan?
- d. Week 4: How comfortable am I reaching out to professors to talk about the thesis? How can I be best prepared to meet with professors?
- e. Week 5: Did I meet with any professors this week? If so, how did it go—what went well, and what will I change next time? Will I need to repeat the steps from this week?
- f. Week 6: What have I learned through this process? How could I talk about the thesis process in an interview for a job or graduate program? Which of the top [Career Competencies](#) will I develop while working on my thesis?

APPENDIX J

THESIS LAUNCH INTERVIEW QUESTIONS

Thesis Launch Interview Questions

1. Thinking back to the beginning of the semester, describe your experience as you began the honors thesis process. (RQ1: Barriers)
 - a. Did you have a faculty member in mind with whom you wanted to work as you considered doing an honors thesis? Please describe.
 - b. Did you have research ideas in mind that you wanted to pursue? Please describe.
2. Prior to participating, what barriers did you perceive that might have prevented you from beginning your thesis? (RQ1: Barriers; RQ2: SE)
3. Where are you now with your thesis progress?
4. Did the intervention help you overcome those barriers? If so, how? (RQ2: SE)
5. How did you use Thesis Launch to move ahead with your thesis?
 - a. How did the weekly steps encourage you to do things differently than you might have on your own? (RQ2: Tasks)
 - b. Please describe your efforts with respect to the weekly goals. (RQ2: Tasks)
 - c. Can you talk a bit about how you used these strategies over time? (RQ2: Tasks)
6. Was the format of the intervention helpful? (RQ3: Tech)
 - a. Did the online and text message format of Thesis Launch make you more or less likely to engage in the activities each week? Please elaborate.
(RQ3: Tech)

b. Do you have suggestions on how to improve the text messages, website, or

Thesis Launch resources? (RQ3: Tech)

7. What barriers do you now perceive as you progress further with your honors thesis work? (RQ1: Barriers; RQ2: SE)

APPENDIX K

THESIS LAUNCH CONSENT FORM

Thesis Launch Consent Form

Dear Student:

My name is Trisha Eardley, and I am a doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University (ASU). I am working under the direction of Dr. Ray Buss, a faculty member in MLFTC. We are conducting a research study on helping students to begin the honors thesis process.

We are asking for your help, which will involve your participation in a 6-week Thesis Launch program. This program is designed to help students start the honors thesis process. By participating in this program, you will be given weekly tasks to complete which should take about one hour per week, including a weekly reflection journal (7-10 minutes/week), which we would like to collect from you. You will also be asked to take a survey at the beginning and end of the process, with each survey taking approximately 10 minutes.

Additionally, some students may be asked to participate in an interview concerning your experience with beginning the honors thesis process. You can choose if you want to participate in an interview, which we anticipate will take 20 minutes total. I would like to audio record this interview, but the interview will not be recorded without your permission. Please let me know if you do not want to participate in an interview or if you do not want the interview to be recorded; you also can change your mind after the interview begins; just let me know.

Your participation in this study is voluntary. If you choose not to participate or withdraw from the study at any time, there will be no penalty whatsoever; it will not affect your grades or standing at ASU. You must be 18 years of age or older to participate. Even if you choose not to participate in the research part of the project, you may participate in the workshops and other activities on how to begin the thesis process. There are no foreseeable risks or discomforts to your participation.

The benefit to participation is the opportunity for you to reflect on and think more about starting your honors thesis, begin the process, and you may learn more about the honors thesis process.

Your responses will be confidential. Results from this study may be used in reports, presentations, or publications, but your name will not be used. To ensure confidentiality, you will create a unique identifier that will be known only to you. It will consist of the first three letters of your mother's first name and the last four digits of your phone number. Thus, for example, Mar0789 would be the identifier for a person whose mother is Mary and whose phone number is (480) 585-0789. You will use this identifier on the reflection journals and the surveys at the beginning and end of the program.

Please let me know if you wish to be part of this study by indicating your consent below.

Thank you,

Trisha Eardley, Doctoral Student
Ray Buss, Associate Professor

This study has been reviewed and approved by the Arizona State University Institutional Review Board. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. If you have any questions concerning the research study, please contact the research team – Ray Buss at RAY.BUSS@asu.edu or (602) 543-6343 or Trisha Eardley at Trisha.Eardley@asu.edu or (480) 727-0447.

1. I agree to participate in Thesis Launch program activities. I agree to allow the researchers to use my reflection journal entries and my pre- and post-test surveys. These will be kept confidential. I may be asked to participate in an interview, and I can choose whether or not to participate.
 - a. I agree
 - b. I do not agree (Please close browser and leave this survey)
2. By providing my cell phone number below, I consent to receive text messages designed to help me with the thesis process. I will receive approximately 2-3 text messages per week for 8 weeks. (Regular messaging and data rates may apply.)
 - a. _____
3. By providing my email address below, I understand that the researchers may use this to send me related program information.
 - a. _____